Original Research

Strategies to Achieve Competencies during Disruptive Change: Emerging Employer Needs and their Impact on Program Deliverables in the Healthcare Sector

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Abstract

The impacts of disruptive change on competency-based education are receiving considerable attention from educators in many sectors across the globe. Systemic disruptive change in healthcare involves substantial changes in institutional performance measurement and reimbursement, and requires time-critical adoption of responsive innovation and management skills on the part of healthcare leaders. From the educational perspective, however, the challenge under disruptive change is the identification of emerging employer needs and corresponding program deliverables of required student competencies. This study presents the results of a focus group of 22 senior executives across various health entities and regions as part of a strategy to develop innovative approaches to address required competency changes in health management education. This paper identifies four major focus areas: (a) required technical competencies; (b) competencies to address change; (c) anticipated challenges; and (d) educational strategies for healthcare management programs. Needed competencies and changes in program objectives were developed through a systematic, evidence-based, consensus building approach using interviews to elicit information that would serve as a foundation for healthcare management education redesign. The needed competencies included enhanced interpersonal skills, transformational leadership skills, collaborative communication, concise presentation skills, and strong skills in data analysis.

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Introduction

The healthcare sector is grappling with significant changes requiring healthcare administrators and executives to implement business strategies to survive and thrive in a disruptive environment. This in turn has created the need to develop innovative educational approaches to provide present and future healthcare leaders skills to adapt to emerging needs in healthcare. The current challenges in healthcare have been described as the result of two combined forces: implementation of enterprise-wide disruptive innovations and the introduction of industry-wide systemic disruptive changes. Disruptive innovations are defined as resulting from a single innovation or the combination of three possible innovations: technology which reduces product/service costs; a business model which allows reaching new market segments; and a value-added network which provides higher degree of benefits to stakeholders in the supply chain including customers (The Christensen Institute, 2018). Systemic disruptive changes are derived from the rapid introduction of new technologies and, most importantly, with the enactment of high-impact legislation affecting entire industries (Delgado, Murdock, & Gammon, 2018).

Apart from technological innovations such as electronic health records and non-invasive devises, the healthcare sector has seen operational disruptive innovations with the goal of improving quality of health and controlling costs. One such case is the Triple Aim framework (i.e., improving the health of populations while also improving the patient's experience of care and reducing the per capita cost of care) advanced by the Institute for Healthcare Improvement. This approach, which has produced tangible improvements, can be considered a disruptive change with considerable implementation challenges. For example, the Triple Aim often produces changes that are in conflict with one another (Berwick, Nolan, & Whittington, 2008). Rarely is a single sector of the care-providing enterprise (e.g., clinicians, administrators, or other support staff) accountable for all three areas of improvement, a fact that introduces its own disruption as needed changes are introduced in a disruptive piecemeal fashion.

System disruptive changes have also created a source of challenges and opportunities in healthcare. For example, government regulations at both the state and federal level have mandated the introduction and application of various technical innovations for all levels of business processes, and have strict adoption timeline requirements. All of this is occurring at a time when the largest demographic group in history, the Baby Boom generation, is moving into retirement age and will become large consumers and arbiters of the healthcare dollar. This demographic group, with its new and better-informed demands, adds more disruption and stress to the healthcare system.

Without doubt, disruptive change in healthcare, whether at the enterprise or system level, heightens the need for appropriate and timely training and educational programs. Given the criticism that educational institutions respond slowly to the needs of industry, it is clear that healthcare administration education needs to find ways to: (a) implement market-driven approaches to identify educational needs in industry; (b) respond quickly to the needs of industry; and (c) design programs which offer the skill sets students require to respond to employer and societal expectations. Working under the concept of disruptive change environments, this study aims at identifying main areas where educators should focus in order to create industry-relevant programs in healthcare.

Background

During the American College of Healthcare Executives (ACHE) Annual Congress in March 2016, the Commission on the Accreditation of Healthcare Management Education (CAHME) assembled 55 leaders in healthcare associations and education to discuss the future of graduate healthcare management education. The group distilled thoughts expressed during that discussion into a white paper that identigied three topics of importance: innovations in education delivery, innovations in the curriculum, and a prognostication about the needs of healthcare leadership in the future. A summary of key recommendations from the group on these topics is listed in Table 1.

Table 1

Recommendations on graduate healthcare management education needs

Focus Area	Recommendations
Innovations in Education Delivery	• Incorporate interdisciplinary approaches • Turn to other industries to better understand innovation and innovative thinking • Understand the disruptive nature of innovation • Develop a best practices platform • Collaborate with other education-related organizations • Identify ways to measure innovation success • Develop an award for innovation in education

Table 1, *cont.*

Innovations in the Curriculum	• Consider innovation as a needed competency • Recognize that innovation is important to critical thinking and problem solving • Develop interactive learning exercises that support innovative thinking
Healthcare Leadership Characteristics in the Future	• Adapt to an environment of fewer health systems and changing leadership roles • Acquire skills for managing the whole ecosystem with less focus on acute care • Acquire skills to manage financial and clinical risk (value-based care) • Engage with non-traditional educational partners and connect with customers in new ways

Source: "To Be The Change: Preparing the Future Leaders of Healthcare" Thought Leader Insights; March, 2016, Commission on Accreditation of Healthcare Management Education.

While these recommendations on graduate health education management are important first steps, far greater detail is needed to translate them into specific guidance for change in graduate healthcare management programs since university resources are limited and change is not rapid. A practical approach must focus on obtaining the "voice of the customer," in Malcolm Baldrige Award terminology, to provide direction and focus to the appropriate next steps. The Baldrige goal, for example, is to capture meaningful information in order to exceed participants' expectations (Scott, 2016). For educators, obtaining the voice of the customer requires not only soliciting the experience of students, but formally soliciting the experience and opinions of those who hire graduates from healthcare management programs and who are collectively experiencing and adapting to rapid disruptive change in a structured way. The overarching goal of this study is to provide specific guidance for change in graduate healthcare management programs. The specific objectives of this study include:

1. Identify main competency and skills healthcare managers (as "Voice of the Customer") consider priorities for recent graduates of healthcare administration graduate programs.
2. Identify main themes healthcare managers consider required to maximize competency achievement and complex learning during disruptive change by students.

Literature Review

Innovations in education delivery

The theory of disruptive innovation helps explain how complicated, expensive products and services are eventually converted into simpler, affordable ones (Hwang & Christensen, 2008). However, obstacles to innovation in education delivery contribute to delays in implementation. These include rising costs, shrinking budgets, and the increasing attractiveness of distance education which are causing colleges and universities to reexamine the way in which curricula are delivered (Blouin et al., 2009). Research shows that, in the context of these evolving university dynamics, successful institutions will be those that establish partnerships and collaborations across systems; cultivate relationships with nontraditional educational partners; implement institutional efficiencies; develop new outcome metrics; and implement practice and process changes (Baker, Bujak, & Demillo, 2012).

Innovation in curriculum

With these changing market trends in healthcare due to innovation, there is increasing agreement that healthcare professors and professionals must prioritize educational outcomes. Healthcare administration students as future executives must have access to new curricula that addresses changes in markets and technology, and trains them with the new set of needed skills. Research in healthcare administration curricula shows the need for innovation and change in the traditional education model (Delgado et al., 2018). However, the goal of incorporating aspects of "entrepreneurship" and "innovation" appears more often in the business school curricula than in a healthcare management education setting (Herzlinger, 2013).

Healthcare leadership characteristics

Traditional healthcare delivery institutions are jumbled mixtures of multiple business models struggling to deliver value in the midst of chaos. They incorporate indecipherable systems of cost accounting, excessive overhead, pervasive cross-subsidization, and unacceptable amounts of variability and medical error (Hwang & Christensen, 2008). The ability to cope with this chaos using effective and efficient leadership is a top-ranked skill for healthcare executives of the future. Additionally, developing integrated leadership teams among facility leaders, ancillary provider leaders, and physician group leaders is essential to successfully respond to the new payment models advocated in the Accountable Care Act (Love & Ayadi, 2016).

Useful change must focus on obtaining the "voice of the customer," in Malcolm Baldrige Award terminology, to provide direction and focus to the appropriate next steps. The Baldrige goal is to capture meaningful information in order to exceed your participants' expectations (Scott, 2016). For educators, obtaining the voice of the customer requires not only soliciting the experience of students, but formally soliciting the experience and opinions of those who hire graduates from healthcare management programs and who are collectively experiencing and adapting to rapid disruptive change in a structured way. As stated, far greater detail is needed to obtain specific guidance for change in graduate healthcare management programs. To accomplish this, two goals were identified as the purpose for this study:

1. Elicit comments from a "Voice of the Customer" (i.e., employers in the healthcare sector) by convening a virtual focus group as an environmental scan using a structured interview approach.
2. Identify possible options and strategies for maximizing competency achievement and complex learning during disruptive change by students.

Methodology

An inductive needs assessment study of a virtual focus group of executives was conducted as an environmental scan using characteristics of phenomenology research that relies on critical reflection and memory of participants. The study was conducted from April to October, 2017. Phenomenology is essentially the study of lived experience or the life world (Van Manen, 2016). An inductive approach is ideal for eliciting responses to the research questions in this study: What are the competencies needed by healthcare management professionals to address disruptive change? In the experience of practicing professionals, should healthcare management programs be redesigned to address disruptive change in healthcare? What are the challenges faced by institutions that delay implementation in disruptive change?

Polkinghorne (1989) identified deductive research as useful when trying to understand or comprehend the meaning of human experience as it is lived. This approach was employed to capitalize on the shared lived experiences and interpretations of the healthcare executives in the rapidly changing, complex healthcare environment. The method is inductive because patterns and themes emerge from the data during analysis.

Data collection

Data for this study was collected through individual open-ended interviews with participants. The same five interview questions (listed in Appendix A) in

four focus areas were administered by the principal investigator. The semi-structured questions were asked in person or via phone, and responses were recorded on paper by the interviewer as observations used as documented data.

Analysis

The data analysis uses a hermeneutic phenomenology approach. First, the principal investigator interviewed each participant and recorded the interviewee's comments on paper along with her notes. Next, each of the 22 interviews was analyzed on its own qualitatively by close reading of the notes to identify and highlight key words and ideas. The notes were then coded to identify and group similar ideas. At this point, the authors met to define central concerns and develop themes from the coded and grouped ideas. In the last phase, the authors finalized the wording of the themes, extracted examples, and selected salient excerpts from the senior executive interviews.

The themes were then subjected to peer examination for verification, which entailed cross-checking survey notes, developing codes, and identifying clusters of similar concepts and final statement themes. The themes were verified as authentic representations of the data by 100% of the peer reviewers, 72.4% of whom were study participants. This reviewer verification was re-verified by the other two members of the research team. Guba's Model for maintaining trustworthiness in qualitative research is highly regarded among researchers (Krefting, 1991). Mirroring Guba's model, the strategies summarized in Table 2 were applied to the methodology.

Table 2

Summary of strategies to address qualitative rigor

Quality criterion	Strategies used
Credibility	Interview technique, member checking and peer examination
Dependability	Detailed description of research methods
Confirmability	Triangulation of responses to reduce investigator bias

Credibility in the study was established by open-ended interviews conducted and recorded with study participants who expressed their lived experiences. Member checking affords each member of the research team the opportunity to verify and approve interpretation of the data (Doyle, 2007). In this study, member checking of the final theme statements occurred after the

peer examination. Feedback from participants confirmed recommendations of the identified issues. Dependability is achieved by explaining the research method to the participants and informing research team members of the interview written transcript details. Data source triangulation examines the consistency among different data sources within the same method (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014). In this study, consistency was found among transcripts from carefully selected participants from different hospital and clinic systems, and different geographical locations. Using more than one type of data source reduces investigator bias and increases the validity of the data.

These steps confirm that the data was represented accurately and fairly and that the data and its subsequent interpretation were dependable and comparable. In many cases, direct quotes from participants were used when discussing results to support key claims and establish confirmability, a hallmark of this method of study.

Results

The description of study participants is presented in Table 3. A total of 22 senior managers and executives participated in the study, 41% were men and 59% women. More than a third (37%) of participants held a position at the vice president level or higher, and 60% worked in a hospital setting. The large majority of participants (95%) had an MHA or MBA degree, and 5% had an MD-PhD with an MBA. Participants were purposely selected from across the United States to elicit their experiences with disruptive phenomena. Geographical distribution of participants included the states of Texas (81%), Florida (5%), California (9%) and Maryland (5%). The study group contains both hospital and non-hospital care providers to reflect the full range of employment opportunities for healthcare administration graduates.

Table 3

General Characteristics of Study Participants (n= 22)

Demographic	%
Gender	
Women	41
Men	59
Position	
CEO/COO/President	14
VP/Chief	23

Table 3, *cont.*

Administrator	27
Director	32
Other	4
Employer	
Health System	46
Hospital	14
Clinic	27
NGO	9
Health Plan	4
Education Level	
MD/PhD/with MBA	5
MHA/MBA	95
Geographical Distribution	
California	9
Florida	5
Maryland	5
Texas	81

The use of hermeneutic phenomenology tools produced the four major focus areas listed in Table 4 from hermeneutic reductions of the 22 virtual focus group interviews. These focus areas are: current skills needed for professional competence; competencies to address changes in healthcare; anticipated challenges in healthcare administration; and educational strategies. Multiple concepts, or themes, were then identified from the interview responses for each question and arranged within the four focus areas presented. These areas, along with a summary of the themes that emerged from the survey analysis, appear in Table 4, followed by a discussion that includes recommendations to address the identified issues. The full set of recommendations is summarized as Appendix B.

Table 4

Development of concepts /themes from interview extracts as data

Quotes by Focus Area	Concepts/Themes
Current skills needed for professional competence	
"Students need to be given more information about other career paths in healthcare, since a rare few will become C-suite employees with the ongoing integration and consolidation in the market."	Gaps in competencies needed by employers and healthcare administration graduates
Competencies to address changes in healthcare	
"Insurers are deliberately paying for less at hospitals, emphasizing ambulatory and free standing sites because of cost. In response, providers are developing new lower cost care delivery models such as telemedicine."	Skills needed in data mining, strategic planning, legislation, policy making and new technologies
Anticipated challenges in healthcare administration	
"Leaders should plan for a career that is much less hospital based. They must understand how their role could fit into the continuum of care including home health, disease management, ambulatory care, public policy making, and population health."	New care delivery and payment models, low budgets, aging workforce, changing workforce dynamics, acceleration of disruptive change.
Educational strategies to support healthcare management programs	
"The Air Force Academy has established a Leadership Institute tract. In addition to management training, it gives graduates a cohort of mentors for their entire career."	Designate continuous learning as a skill valued by employers
	Provide opportunities for team projects and leadership with feedback
"American Leadership Forum (ALF) has a medical class that meets on a variety of contemporary topics for a year, following which the cohort remains in touch."	Emphasize field and contemporary cases
	Emphasize student memberships in professional organizations for learning and certifications
"Sodexo uses simulation rooms to train and give feedback to housekeepers from peers and management on various common scenarios. Are there applications [of this model] for management trainees?"	Increase internship, shadowing opportunities
	Provide tasks to improve critical thinking, analytic skills
"Have senior MHA students spend time with 4th-year medical residents and other healthcare trainees. Provide a forum for them to talk together about what they are seeing from their perspectives as issues and concerns."	Emphasize communication skills
	Implement joint mentorship programs for students with providers
"Arrange for high potential students to shadow a member of the executive team. I regularly have a graduate student with me for one week shadowing sessions so that they can better understand the organization and the issues."	Survey alumni and employers regularly on their skill needs and assess gaps
	Host presentations with director- and manager-level panelists for students
	Provide opportunities for students to spend time with other healthcare discipline trainees to see other perspectives

Discussion

Current skills needed for professional competence

There was broad agreement among the participants that there are serious deficits in the skills and professional expectations of students who come straight from training with little or no relevant work experience. In these cases, internships and work experience must be a priority. Noting that "some issues may be generational," most of those interviewed mentioned recently observed deficits, particularly in Millennials. More broadly, as Baby Boomers and Gen Xers retire, they may leave leadership gaps in areas where Millennials have yet to gain expertise. (Brack & Kelly, 2012).

As a complement to internships and work opportunities, students should have mentors for career guidance and to help them develop practical knowledge to accompany their theoretical knowledge. Most are intellectually curious but "don't know what they don't know." The challenge is translating their learning to the real world. As leaders, they must be able to work with professionals across all levels of the organization, including physicians and faculty. Students tend to be good analytically, but need much stronger data skills, especially with Excel and advanced Excel features (e.g., pivot tables), including demonstrated ability to organize data into tables so that conclusions and recommendations can be supported by data. Students should be helped to develop realistic expectations about their initial jobs and short term career goals so that they can build networks focusing on other options than the "C Suite." This perspective is well summarized in the participant quote for this section noted in Table 4.

Competencies to address changes in healthcare

It is critical that leaders be able to work in and lead a variety of stakeholder teams that can identify the common challenges and then negotiate solutions. Stakeholders can include both clinical and educational departments, providers, payers, historical competitors, patients, and nonprofits. Strategic planning becomes a continual cycle with ongoing environmental scans and quantifiable metrics. Information gathered must be translated into strategies and plans for mitigating harmful impacts and incorporating tolerance limits for uncertainty. Constant monitoring of the legislative and policy environment is critical. Leaders must have the skills to interpret data and extrapolate answers that are not obvious. Plans must be developed to mitigate labor shortages that could significantly impact the delivery of services. It is very important to understand the strengths and weaknesses of the entire healthcare organization – not a narrow departmental focus. Current clinical service offerings and programs

need to be evaluated regularly to determine which can be streamlined, outsourced, or accomplished via a partnership. The participant quote in Table 4 summarizes this perspective. Leaders must assess and develop their skills continually as part of lifelong learning that is necessary for managing evolving complex environments. These include awareness of new technologies, personal health apps, various uses of social media, emotional intelligence, and the emerging field of cyber security.

Anticipated challenges in healthcare administration

All participants noted that political changes at both the federal and state level are producing unpredictable and unexpected healthcare policy legislation that impacts revenues and service delivery models. The rapid acceleration of these policy changes was identified as a significant threat. Many of the changes make it increasingly difficult for small practices and small/rural hospitals to survive. Lack of legislative coordination has produced opposing incentives for physician groups and hospitals, making physician relations difficult and requiring skilled planning and facilitation. The growing prevalence of high deductible plans with higher patient copays, along with other changing reimbursement models that include the quality of patient experience and penalties for readmission in calculating payment amounts, are examples of value-based payment models meant to drive down reimbursement. These changes in how (and how much) care is paid for put renewed pressure on frontline cost controls and demand that more care be provided with reduced resources. An aging healthcare workforce, particularly in nursing, where in some states specific nurse-to-bed ratios are mandated, is an increasing concern. Providers can no longer rely on reputation as a justification for price, but must prioritize and justify cost and value. At the same time, governmental inclination to support the burden of caring for the uninsured, particularly by expanding Medicaid or fully implementing the Affordable Care Act, is dwindling. Robust community partnerships are required to encompass the new concept of "total cost of care" in a collective system that has been designed to make people better, but not to make them better at lower cost. These partnerships are also necessary to identify the common conditions for hospital readmission (such as COPD and heart failure), and then to develop management strategies for these conditions which keep patients out of the hospital, using partnerships from a population health perspective. This perspective is summarized in the participant quote for this section in Table 4.

Educational strategies to support healthcare management programs

The participants had a number of further suggestions for keeping healthcare management educational programs relevant. Universally, they felt that advanced Excel skills, followed closely by Visio and Microsoft Project Management skills, are technical requirements. Most felt that Lean and Six Sigma efficiency programs common in the market may be too complex or time consuming to introduce to the educational environment unless their use is an institutional norm. Study participants emphasized the need to provide students with relevant work experience through internships, field cases, and contemporary complex case studies like those published in the *Harvard Business Review*.

Study participants believed that students must have (a) better critical thinking and analytic skills; (b) opportunities to participate in team projects and leadership opportunities with ongoing feedback; and (c) more experience in public speaking and making presentations. Future leaders must also understand that lifelong learning is essential through continuing education, membership in professional organizations, and study for certifications that have market standing. Programs should survey alumni at 1, 5 and 10 years after graduation to see what their skill needs are, get their reflections on the management education they received, and identify the gaps that appear at different stages of their careers.

Respondents noted that programs need to cultivate relationships with their regional healthcare industry companies and invite leaders of insurance, hospitals, clinics, community organizations, physicians, and other industry leaders to lecture on contemporary issues related to health. Several examples of industry training and leadership programs are noted in this section of Table 4. These professionals are then also available to help with joint mentorship programs for students. Practitioner faculty, healthcare executives in adjunct roles, and guest lecturers currently working in the healthcare field are key resources for bringing contemporary issues and solutions into the classroom, and many are just waiting to be asked. Many members of this group are also available for "exploratory interviews" for those students interested in investigating the various roles and organizations that provide employment opportunities to graduates. Programs should schedule formal panel discussions for students with director- and manager-level participants to discuss career paths, expectations, and preparation. Programs can also establish formal relationships with healthcare providers so that students can work with a mentor on a field project specific to their interest. Students can also volunteer at hospitals and clinics as "greeters" to better understand and grasp the patient experience.

Limitations

This study was conducted in one large urban south central metropolitan area, with other metropolitan areas around the region, as well as metropolitan areas on the East Coast, West Coast, and Gulf Coast. Care was taken to include executives from various healthcare environments, but the study cannot claim that the range of reported responses is necessarily comprehensive and generalizable to all other settings. The findings focus on the needs most commonly noted by participants; therefore, more individualized needs may not be sufficiently represented. The study included interpretation of lived experiences of 22 senior executives, which can be considered as a smaller sample by some methods. However, the phenomenological-based focus group survey approach gets at a quality and richness of the experience that satisfied our study objectives.

Conclusions

This study was designed to elicit individual executives' perspectives on current graduates, as well as study respondents' concerns regarding disruptive changes in the healthcare sector. Strategies to mitigate the effects of those changes as well as prepare future leaders to navigate them were also gathered via interview. The phenomenological survey approach capitalizes on the shared lived experiences of healthcare executives in the rapidly changing, complex healthcare environment. The themes derived from the interviews hold implications for improving healthcare management training and preparing graduates to assume leadership roles in a sector experiencing significant disruptive change. Many of the theme statements contain concrete examples of what actually works in the executives' current experiences with disruptive phenomena and suggestions for managing the changes anticipated over the next five years.

Understanding required competencies and needed changes in healthcare leadership style in the current health management system has implications for future quality of hospital care. The impact of disruptive change points to the likelihood of responsive change in the organizational structure of existing and future institutions. Changes in organizational culture to nurture diversity in leadership and skills will also be needed.

The present study offers a basis for making substantiated changes to current healthcare management education programs. The work gains strength from diverse healthcare professional interviews whose insights broadened the applicability of the results. Interpretation of the interviews with these customer/consumers resulted in identification of management competencies that graduates lack, and identification of leadership competencies graduates

will need to address disruptive changes in healthcare successfully. It was found that healthcare management graduates will need enhanced interpersonal skills, transformational leadership skills, concise presentation skills, strong technical skills like data analysis, and the ability to engage in cooperative communication with new sets of collaborators. Appendix B summarizes the recommendations based on this study.

There is an opportunity to expand research in the area of educational program redesign in healthcare management, with an emphasis on enhanced competency-based education in the face of disruptive change. Research shows that other industries have already experienced waves of disruption like those faced in healthcare today. For example, an analysis of Kodak's history reveals their subsequent loss of market share when faced with the advent of the rise of digital photography and a lack of strategic response. This demonstrates the imperative for healthcare administrators and educators alike to create organizational cultures and competencies capable of navigating disruptive changes in the healthcare sector (Lucas & Goh, 2009).

References

Baker P.M.A., Bujak K.R., & DeMillo R. (2012). The Evolving University: Disruptive Change and Institutional Innovation: Proceedings of the 4th International Conference on Software Development for Enhancing Accessibility and Fighting Info-exclusion (DSAI 2012),v.14, pp. 330-335.

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The Triple Aim: Care, Health, and Cost. *Health Affairs, 27*(3), 759-769.

Blouin, R. A., Riffee, W. H., Robinson, E. T., Beck, D. E., Green, C., Joyner, P. U., . . . Pollack, G. M. (2009). Roles of Innovation in Education Delivery. *American Journal of Pharmaceutical Education, 73*(8), 154.

Brack, J., & Kelly, K. (2012). Maximizing millennials in the workplace. *UNC Executive Development, 22*(1), 2-14.

Commission on Accreditation of Healthcare Management Education. (2016) To Be The Change: Preparing the Future Leaders of Healthcare Thought Leader Insights. Retrieved from https://cahme.org/files/Final_CAHME_To_Be_the_Change.pdf.

Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Neville, A. J. (2014). The Use of Triangulation in Qualitative Research. *Oncology Nursing Forum, 41*(5), 545-547.

Delgado, R., Murdock, S., & Gammon, E. (2018) A Model for Healthcare Administration Education to Meet Needs of Disruptive Change in Healthcare. *Journal of Healthcare Administration Education*, 36(2), 491-504.

Doyle, S. (2007). Member checking with older women: A framework for negotiating meaning. *Health Care for Women International*, *28*(10), 888-908.

Herzlinger, R. (2013). *Benchmarks for confronting the challenges for innovation in healthcare with a modern curriculum. 21st-century health care management education: confronting challenges for innovation with a modern curriculum* (White Paper Series). Boston, MA: Harvard Business School.

Hwang, J., & Christensen, C. M. (2008). Disruptive innovation in health care delivery: a framework for business-model innovation. *Health Affairs*, *27*(5), 1329-1335.

Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *American Journal of Occupational Therapy*, *45*(3), 214-222.

Love, D. B., &Ayadi, M. F. (2016). Redefining the core competencies of future healthcare executives under healthcare reform. *Administrative Issues Journal: Connecting Education, Practice, and Research, 5*(2).

Lucas Jr, H. C., & Goh, J. M. (2009). Disruptive technology: How Kodak missed the digital photography revolution. *The Journal of Strategic Information Systems, 18*(1), 46-55.

Polkinghorne, D. E. (1989). *Phenomenological research methods. In Existential-phenomenological perspectives in psychology*. Boston, MA: Springer.

Scott, L. (2016). Baldrige Criteria Commentary (Health Care). Retrieved February 19, 2019, from https://www.nist.gov/baldrige/baldrige-criteria-commentary.

The Christensen Institute. (2018). Disruptive Innovation. Retrieved January 3, 2018, from https://www.christenseninstitute.org/disruptive-innovations/?gclid=EAIaIQobChMI2L3Dn_Xv1QIVUy-BCh2rGgaEAAYASAAEgJucPD_BwE

Van Manen, M. (2016). *Human Science. Researching lived experience: Human science for an action sensitive pedagogy*. New York, NY: Routledge.

Appendix A

Interview Questions for Healthcare Executives

Current skills opinion. A universal challenge for healthcare educators is to provide students with the optimal mix between theoretical knowledge and the applied professional skills valued by employers. As an employer of graduates of MHA, MBA, and MPH programs:

- Do you feel we have accomplished that goal?
- If yes, can you give an example of a specific valued skill set that recent graduates have demonstrated?
- If no, can you give examples of skill sets that you feel are weak or missing?

Evolving competencies needed. Given the changing and disruptive dynamics in the healthcare sector, it is clear that educational institutions will require new approaches to meet the evolving competencies needed in the field. From your viewpoint, what do you see as the 3-5 most disruptive challenges facing healthcare during the next five years?

Anticipated challenges. For each of the challenges you identified, what are the key administrative competencies associated with being able to comprehend, mitigate the impact, or resolve them?

Corresponding educational strategies in healthcare management programs. Other sectors (engineering and computer science, for example) have developed strategies to handle disruptive change in their sectors. These include practitioner faculty. Based on your knowledge of those areas, do you have any thoughts about modifications to healthcare's approach?

Do you have any further ideas about how to keep healthcare management educational programs relevant and contemporary?

Appendix B

Results Summary Table

Focus areas	Identified issues and recommendations
Current skills needed for professional competence	Lack of relevant work experience or internships
	Realistic career expectations
	Identified mentor
	Strong data skill sets
	Intergenerational and interdisciplinary competencies
Competencies to address changes healthcare	Ability to work on and lead interdisciplinary teams addressing complex problems
	Strong data mining and extrapolation skills
	Knowledge of flexible reimbursement models and cost accounting
	Skills for continual strategic planning, business planning, assessment, and modification
	Understanding [the health professional's ?] role in legislative and policy making process
	Understanding of social issues responsible for homelessness, poor health, etc. and interventions
	Ability to identify and collaborate with stakeholders
	Familiarity with nonhospital-centric ways of delivering services
	Continuum of care knowledge with primary care as gatekeeper
	High emotional intelligence with collaboration skills
	Skills in social media and new technologies for patient communication and care
	Knowledge of cyber security for PHI

Appendix B, *cont.*

Anticipated challenges in healthcare administration	New care delivery and payment models
	Shrinking margins
	Increase in high deductible plans, underinsured, uninsured
	Unpredictable government policy and economic changes
	Aging workforce
	Evolving physician relationships
	Acceleration of discontinuous [disruptive?] change
	Opposing incentives
	Total cost burden and care issues across the continuum
Educational strategies to support healthcare management programs	Emphasize lifelong learning as a skill valued by employers
	Utilize practitioner faculty, healthcare executive, and physician lecturers for contemporary issues
	Provide opportunities for team projects and leadership with feedback
	Emphasize field cases, contemporary paper cases
	Emphasize student memberships in professional organizations for learning and certifications
	Increase internship, shadowing opportunities
	Provide tasks to improve critical thinking and analytic skills
	Provide greater emphasis on public speaking skills