Using Laddering Interviews and Hierarchical Value Mapping to Gain Insights Into Improving Patient Experience in the Hospital: A Systematic Literature Review

Pankaj Kumar, MD, MBA¹, Michele Follen, MD, PhD, MBA², Chi-Cheng Huang, MD¹, and Amy Cathey, PhD, MBA³

Abstract

Hospitals are continuously facing pressures to mitigate the gap between patient’s expectations and the quality of services provided. Now with Medicare reimbursements tied to Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores, institutions are attempting interventions to increase satisfaction scores. However, a standard framework to understand patient values and perceptions and subsequently translate it into reliable measures of patient satisfaction does not exist, particularly in the inpatient settings. This article highlights opportunity for the addition of qualitative customer value research to augment the information providers gain from HCAHPS scores and provide additional indicators that can be used in improving the patient experience. In this article, patient laddering interviews and hierarchical value mapping are reviewed as methodologies to understand patient core satisfaction values during their hospital stay. A systematic literature search was performed to identify articles addressing laddering interviews and hierarchical value mapping as applied to health care. Inclusion criteria involved studies relating to health care and using laddering interviews. Exclusion criteria included non-healthcare studies. Only 3 studies were found eligible for this review. Our systematic review of literature revealed only few studies which may help to guide us to improve patient experience using laddering interviews. These interviews can help compose a personalized bedside survey which may be more meaningful than current widely used HCAHPS survey.

Keywords

HCAHPS, patient satisfaction, hierarchical value mapping, laddering interviews, marketing, patient perspectives/narratives, means-end theory

Introduction

Patient Experience Versus Patient Satisfaction

The term patient experience has been used in lieu of patient satisfaction but without being understood well in health care. According to The Beryl Institute, a global leader in improving health care patient experience, it is defined as “the sum of all interactions, shaped by an organization’s culture, that influence patient perceptions across the continuum of care.” As per Agency for Healthcare Research and Quality (AHRQ), patient experience is assessed by eliciting patient’s perspective on how something should happen in health care; whereas, patient satisfaction is a summary of patient’s expectations about a health care encounter and whether they were met. Two patients receiving similar care may have different satisfaction levels due to different subjective expectations. To understand how to effectively measure patient experience, one should be familiar with pros and cons of Hospital Consumer Assessment of Healthcare Providers...
Review of HCAHPS Survey

In health care, HCAHPS is the dominant survey used to capture patient experience during patients’ hospital stay. The HCAHPS survey is a national, standardized and the most widely used survey among health-care systems. The Centers of Medicare and Medicaid Services (CMS) and AHRQ piloted the survey in 2002 and was launched in 2006. In May 2005, the National Quality Forum endorsed HCAHPS. Then, in December 2005, the Federal Office of Management and Budget gave its final approval for the survey to be implemented nationally (3).

The HCAHPS survey is administered in a random sample of hospital inpatients 48 hours to 6 weeks after discharge. A minimum of 300 eligible surveys must be submitted by the hospital for each reporting period (4). It is also offered in multiple languages, by phone or mail. There are total of 21 core questions covering 7 composites (communication with doctors, communication with nurses, responsiveness of hospital staff, pain management, communication about medications, cleanliness of hospital, and quietness at night of hospital). Other miscellaneous composites include discharge information (no to yes), willingness to recommend (definitely no to definitely yes), and overall hospital rating (0 to 10 rating scale) (4). Unfortunately, there are several limitations in HCAHPS survey design and its use as a driver for quality improvement projects in the inpatient settings. The HCAHPS survey is routinely sent out to patients after discharge and faces challenges of low response rates (5). Survey response rate can be important determinant of the validity of survey results with greater than 70% often desirable (6); however, response rates have historically been low at 32.8% and strategies to increase response rates have been suggested (7). McFarland et al analyzed HCAHPS survey data from 934 800 patient respondents who were seen at 3907 hospitals across the country, representing more than 95% of the nation’s hospitals. They studied demographic and structural factors (hospital beds) and concluded that hospital size and primary language (non-English speaking) most strongly predicted unfavorable HCAHPS scores (8). Siddiqui et al studied specialty hospitals and general medical hospitals (GMH) and found specialty hospitals having significantly higher overall HCAHPS patient satisfaction score than GMHs, although more than half of this difference disappears when adjusted for survey response rate. They suggested that comparisons among health-care organizations should take into account survey response rates (7). Another drawback, HCAHPS surveys do not provide real-time feedback to house staff, physicians, nurses, or administrators on how they can improve patient care prior to discharge. The standardized survey does not ask patients about other important factors affecting their hospital experience, for example access to information and overall comfort of the environment. Yet another limitation of the HCAHPS survey is lacking retrospective analysis of which provider was involved in low scores for a specific survey section, hence formulating targeted quality improvement projects next to impossible. Another limitation of HCAHPS survey is its delayed administration. The survey is sent out 48 hours to 6 weeks after patients leave the hospital, with results reaching back to hospital well after patient care has ended. This renders any quality improvement efforts futile while the patient is still admitted to the hospital. Measuring responses in real-time can not only identify pitfalls but also drive interventions while inpatient. For example, hospitalist nurse can round on patients in the afternoon rather than having patients mail in surveys with comments after they have discharged. Other limitations stem from HCAHPS’ basis as a customer satisfaction survey. Satisfaction surveys by nature focus on gathering a quantitative evaluation by the customer of past actions. Even when using advanced statistical analysis techniques, satisfaction surveys do not, and are not intended to, provide a deep understanding of why certain assessments take place or what alternatives might change those assessments in the future (9). Thus, a more robust marketing research methodology beyond HCAHPS is required which takes into consideration our regional patient population segment.

Consumer Values and Means-End Theory

From a business perspective, customer value is the customers’ perception of what they want to have happen in a specific use situation, with the help of a service offering, in order to accomplish a desired purpose or goal (9). Often understanding customer value is easy but measuring it can be challenging. Means-end chain (MEC) theory facilitates the understanding of the consumer’s expectations, choice, value, and how consumers link the attributes of products and services with particular consequences satisfying their personal values (10). Reynolds and Olson (2001) proposed a MEC approach focusing on consumers’ knowledge in 3 key areas, product attributes, consequences, and values. Common application of the MEC approach has been in eliciting consumer motivations, and reasons for their choices (10). In marketing, frequently a hierarchical representation of customers’ views of the service can be developed. It is represented on 3 levels by attributes, consequences, and desired end-states (11–13). At attributes level, the tangible service characteristics can include “I get to see doctor on time” and “staff informed me of delays.” Consequences are functional and physiological attractions like “my doctor understands me” and “makes me feel better.” At the highest level, desired end-states, are characterized by consumers’ deep-seated values, like “good health” and “trust in doctor.” As one initiates a conversation about a service satisfaction, the interviewee will initially describe it frequently in terms of attributes. As the interviewer probes into asking why he or she likes that attribute, the conversation deepens and often
consequences and end-states surface. The hierarchy suggests a top-down approach to understand patient needs. This approach is successful as it focuses on future states and is more stable (9). In marketing analysis, there are predominantly 2 forms of customer value interviews, ladder technique and grand tour. We explain the laddering technique as below.

Laddering Interviews and Hierarchical Value Maps

Laddering is a moderately structured interviewing method that is designed specifically to understand means-end associations that customers have toward a service or product (14). It is like a peeling process, in which you start peeling the outer layers of an onion until you get to the core. This process can be tedious, time-consuming but the benefits it provides far outweigh the costs. Gengler et al has described it as “reasons behind the reasons” (13). Beginning one attribute at a time, the interviewer asks a series of probing questions to determine the relationship between the attribute and higher order consequences and desired end-states (aka A-C-E sequence). Probing is an essential aspect of laddering interviews and helps elicit higher value states. Interviewers are suggested to ask “How does that make you feel?” to elicit these higher consequences and end-states (10). After collecting all the value dimensions from different laddering interviews, a Hierarchical Value (HV) Map is created. Reynolds and Gutman pointed out that when the sample size is between 30 and 50 the correlation may be discovered through HV map (11).

Returning to HCAHPS survey, we see that it is predominantly an attribute-level survey and does not seem to address higher value hierarchy states like consequences or end-states for patients. Health care is a unique service industry and one which is very personalable. It distinguishes itself from others by the very nature that is it essential but not necessarily desired. Consumers choose health-care service when they are ill and often emotionally vulnerable. Another distinctive characteristic of health care is that patient is a co-creator of the services, and an accurate description of symptoms of illness is essential for delivery of health services (15). Laddering interviews can be used to peel that layer and find hidden patient values, leading to a delighted customer. An example is seen in de Ruyter et al study which found empathy as the most important attribute in health care (16). Our systematic review was meant to further study if these techniques have been used in health care to assess patient experience.

**Methods**

**Search Strategy and Selection of Studies**

**Literature search strategy.** We focused on the research question of use of hierarchical value map (HVM) or laddering interviews for understanding patient values. We used PubMed, Web of Science, and EBSCOhost to conduct our systematic literature search. Of note, we were not able to find any meta-analysis or systematic reviews based on our research question.

**Study selection.** Following inclusion and exclusion criteria were used to select our studies (Table 1). Non-English and unpublished studies were not excluded to broaden literature on this scarcely studied topic. The data collection results are summarized in Table 2.

**Results**

After performing a literature search (PubMed) of “hierarchical value mapping” and “patient,” 24 studies resulted. The PRISMA flow diagram is shown in Figure 1. In contrast, by using search term “laddering interviews” only excluding patient there were only 11 articles found. Literature search of Web of Science using “laddering interviews” revealed 160 articles whereas literature search of EBSCO Business Source Premier revealed 76 studies. A combined search of all the 3 terms on PubMed revealed zero studies. After applying exclusion criteria on PubMed articles only one study used laddering interviews for patient care (17) and that too not direct patient care but using laddering interviews to understand ideal medical doctor. Applying exclusion

**Table 1. Inclusion and Exclusion Criteria for Literature Search.**

| Inclusion Criteria | Exclusion Criteria |
|--------------------|--------------------|
| Studies relating to health care | Did not directly address study of laddering interviews in health care |
| Directly using laddering interviews | Only abstracts |
| Both English and non-English literature | Non-health-care |
| Both published and unpublished literature | |

**Table 2. Article Search Results with Various Databases.**

| Search Term | PubMed | Web of Science (Business Source Premier) | Google Scholar |
|-------------|--------|----------------------------------------|---------------|
| Hierarchical value mapping | 107 | 1033 | 3 | 48 |
| Laddering interviews | 11 | 160 | 76 | 1250 |
| Patient | 6,786 | 5,854 | 265,168 | 5,660 |
| 257 | 667 | | |
| HVM & patient | 24 | 1 | 1 | 3 |
| LI & patient | 1 | 2 | 1 | 103 |
| All three terms | 0 | 1 | 1 | 1 |

Abbreviations: HVM, hierarchical value mapping; LI, laddering interviews (as of 27 December, 2019).
criteria on search of EBSCO Business Source Premier revealed one study employing laddering interviews to uncover desired qualities and behaviors of general practitioners (18). Exclusion criteria on search of Web of Science revealed a study by Lee and Lin which studied HVM modelling in the “healthcare service industry” in Taiwan (19). This study is the most comprehensive we found shedding light on consumer behaviors in the health-care industry. They interviewed consumers regarding motivations behind health-care choices and then developed a HVM. The 3 research studies are summarized in Table 3.

**Discussion**

Our study revealed only 3 studies exploring laddering interviews and HVMs in context of patient experience. Unfortunately, many of our selected studies had a small sample size of respondents. Some studies suggest etiquette-based communication and sitting at bedside may improve patient experience (20,21). Recently, providing real-time deidentified patient satisfaction results with education and incentive system to residents may help as well (22,23). Indovina et al employed real-time daily patient feedback to providers coupled with provider coaching. They used 3 provider-specific questions taken from a survey that was available on the US Department of Health and Human Services website and was not obtained via laddering interview techniques. They developed a “daily survey” and found hospitalists who received real-time feedback had a trend toward higher proportion of top box HCAHPS scores and overall rating of hospital, but this was not statistically significant (23). The strategies in this study to improve patient experience were only hypothesized and a deep dive into patient experience and core values was never undertaken.
| Study | Study Purpose | Time Frame | Study Design | Sample Size | Results | Relevant Findings |
|-------|---------------|------------|--------------|-------------|---------|-------------------|
| Miles et al (17) | Examine utility of laddering interview technique to investigate issues in medical education | April 2004-February 2005 | Laddering technique interviews | Doctors (n = 30) Medical students (n = 31) Patients (n = 33) | Doctors: Mean number of years since qualifying was 23.13 ± 6.86 (range 8-34) Students: 12 (39%) male and 19 (61%) females, their mean age was 26.35 ± 8.07 (range 17-45) Patients: 14 (42%) males and 19 (58%) females. Mean age was 45.12 ± 19.31 years. | -Use of laddering resulted in data-rich results for all 3 stakeholder groups -All interviews were conducted by same researcher -All the characteristics identified by the patients revolved around "communication and interpersonal skills" attributes. -In conclusion, the laddering technique data can be used to develop an instrument to assess student attitudes toward professional behaviour in medical doctors. |
| Gruber (18) | Study qualities and behaviors of general practitioners that patients' value. | Not mentioned, publication date April 2011 | Exploratory research study using semistandardized qualitative laddering interviewing technique. Snowball sampling was performed. | 20 respondents who had experienced a service recovery encounter with their GP while 18 respondents who had a normal encounter, for total of 38 respondents | Total of 375 ladders were collected from the laddering interviews and the 38 respondents provided between 5 and 26 ladders each, with an average of 9.9 ladders per respondent. | -Study conducted on Family Health Service division of National Health Service (NHS). -Objective to create attribute-consequence-value chains (A/C/V) using means-end theory to develop a hierarchical value map. -Second objective to reveal benefits sought by patients in encounter. -Interviews lasted between 15 and 78 minutes. -Total of 375 ladders collected from interviews. -LADDERMAP software used for analysis. Laddering provides researchers with research design unlocking means-end considerations otherwise hidden. |

(continued)
### Table 3. (continued)

| Study         | Study Purpose                                                                 | Time Frame                  | Study Design                                                                 | Sample Size | Results                                                                 | Relevant Findings                                                                 |
|---------------|-------------------------------------------------------------------------------|-----------------------------|------------------------------------------------------------------------------|-------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Lee and Lin (19) | Study applies MEC analysis to model a health care consumer HVM to understand how consumers transform the service attributes into individual consumer's values. | Not mentioned, publication date February, 2011 | Qualitative (means-end chain analysis) and quantitative research methods | Total of 700 questionnaires were delivered to patients and 504 completed, 72% response rate. Based on survey results, 50 respondents were selected for interviews | Hierarchical value map was created with \( n = 21 \) valued "feel at ease", \( n = 18 \) valued "satisfaction" and \( n = 22 \) valued "convenient." | - Patients from 2 national university medical centers and 4 private regional hospitals in Taiwan. Each interview lasted approximately 50 minutes. - HVM constructed indicates respondents most often observe a sense of administrative procedures, time saving, and convenience. |

Abbreviations: GP, general practitioners; HVM, hierarchical value map; MEC, means-end chain.
Value Proposition

With the push from volume to value-based reimbursement models, hospitals are now motivated more than ever to achieve improvements in specific HCAHPS domains (24). Based partly on these scores, hospitals can either forgo or gain up to 1.5% of their Medicare payments for the fiscal year (FY) 2015 increasing to tied amount of 2% of reimbursement dollars at risk in FY 2017 (25). Estimates predict that patient satisfaction will determine 30% of the incentive payments, while improved clinical outcomes will decide 70%. It is also known that overall higher patient satisfaction scores are associated with lower 30-day risk-standardized hospital readmission rates after adjusting for quality (26). Hence, patient satisfaction scores is linked to both direct penalties as well as indirect readmission penalties which have steadily increased from 1% in FY 2013, 2% in FY 2014, and 3% in FY 2015 onward with FY 2017 CMS estimate of total penalties being US$528 million (27).

Since 1990s, hospitals have recognized that customer service and provider—patient interactions are prudent in pursuit of successful outcomes, and have emphasized the measurement and reporting of patient satisfaction measures (28). Improving patient satisfaction scores has an even larger impact at university-level by facilitating more funding for further research from institutions like Robert Wood Johnson Foundation, The Beryl Institute (Patient Experience Grant Program), and AHRQ to mention a few.

Conclusion

Based on our systematic review of literature, we suggest further exploring laddering interviews as a tool to understand patient’s core values that drive optimal patient experience. A personalized bedside survey derived from laddering technique has the potential to target specific quality improvement projects, which may encompass physicians, advanced practice professionals, nursing, dietary department, and department of patient experience. The impetus for this study comes from limitations of using only HCAHPS scores to make patient experience assessments, including poor response rates of HCAHPS scores and frustration on implementation of quality improvement projects in inpatient settings. We plan to conduct laddering interviews and construct HV maps to understand our patient population better in upcoming future study.

Limitations

Due to scant research in this field, as well as involvement of overlapping marketing and advertising concepts, there may be several business journals which may not be represented completely in our search protocol. Being able to link patient feedback to individual providers is a limitation of most health-care patient experience surveys which also affects laddering interviews.

Authors’ Note

The views expressed in this article are of author’s and not an official position of any of the affiliated institutions.

Acknowledgments

Authors wish to thank other anonymous reviewers of the manuscript allowing edits and corrections resulting in final article.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Pankaj Kumar, MD, MBA https://orcid.org/0000-0002-8068-9770
Amy Cathey, PhD, MBA https://orcid.org/0000-0001-8291-0726

References

1. The Beryl Institute Website. 2017. Updated October 3, 2019. Retrieved December 26, 2017 from: http://www.theberylinstitute.org/.
2. What is Patient Experience? Agency for Healthcare Research and Quality. 2017. Retrieved and updated January 4, 2019 from: https://www.ahrq.gov/cahps/about-cahps/patient-experience/index.html.
3. Ketelsen L, Cook K, Kennedy B. The HCAHPS Handbook: Tactics to Improve Quality and the Patient Experience. 2nd ed. Pensacola, NC: Fire Starter Pub; 2015.
4. Studer Q. The HCAHPS Handbook: Hardwire Your Hospital for Pay-for-Performance Success. StuderGroup; 2010.
5. Sitzia J, Wood N. Response rate in patient satisfaction research: an analysis of 210 published studies. Int J Qual Health Care. 1998;10:311-17.
6. Baruch YHB. Survey response rate levels and trends in organizational research. Hum Relat. 2008;61:1139-60.
7. Siddiqui ZK, Wu AW, Kurbanova N, Qayyum R. Comparison of Hospital Consumer Assessment of Healthcare Providers and Systems patient satisfaction scores for specialty hospitals and general medical hospitals: confounding effect of survey response rate. J Hospital Med. 2014;9:590-93. doi:10.1002/jhm.2225
8. McFarland DC, Ornstein KA, Holcombe RF. Demographic factors and hospital size predict patient satisfaction variance—implications for hospital value-based purchasing. J Hospital Med. 2015;10:503-509. doi:10.1002/jhm.2371
9. Woodruff RB, Gareial S. Know Your Customer: New Approaches to Customer Value and Satisfaction. Blackwell Business; 1996:p.xvii 338.
10. Reynolds TJ, Olson JC. Understanding Consumer Decision Making: The Means-End Approach to Marketing and
Kumar et al

11. Reynolds TJ, Gutman J. Laddering theory, method, analysis, and Interpretation. J Advert Res. 1988;28:11-31.
12. Reynolds TJ, Whitlark DB. Applying laddering data to communications strategy and advertising practice. J Advert Res. 1995;39:9-17.

13. Gengler CE, Reynolds TJ. Consumer understanding and advertising strategy: analysis and strategic translation of laddering data. J Advert Res. 1995;35:19-33.
14. Hinkle D. The Change of Personal Constructs from the Viewpoint of a Theory of Construct Implications. [Unpublished PhD Thesis]. Ohio State University; 1965.
15. Lanseng E, Andreassen T. Electronic healthcare: a study of people’s readiness and attitude toward performing self-diagnosis. Int J Serv Ind Manag. 2007;18:394-417.
16. de Ruiter K, Wetzels M, van Birgelen M. How do customers react to critical service encounters?: A cross-sectional perspective. Total Qual Manag. 1999;10:1131-45.
17. Miles S, Leinster SJ. Identifying professional characteristics of the ideal medical doctor: the laddering technique. Med Teach. 2010;32:136-40. doi:10.3109/01421590903196987
18. Gruber T, Frugone F. Uncovering the desired qualities and behaviours of general practitioners (GPs) during medical (service recovery) encounters. J Serv Manag. 2011;22:491-521.
19. Lee WI, Lin CH. Consumer hierarchical value map modeling in the healthcare service industry. Afr J Business Manag. 2010; 5:722-36.
20. Tackett S, Tady D, Rios R, Kisuule F, Wright S. Appraising the practice of etiquette-based medicine in the inpatient setting. J Gen Intern Med. 2013;28:908-13. doi:10.1007/s11606-012-2328-6
21. Swayden KJ, Anderson KK, Connelly LM, Moran JS, McMahon JK, Arnold PM. Effect of sitting vs. standing on perception of provider time at bedside: a pilot study. Patient Educ Couns. 2012;86:166-71. doi:10.1016/j.pec.2011.05.024
22. Banka G, Edgington S, Kyulo N, Padilla T, Mosley V, Afsarmanesh N, et al. Improving patient satisfaction through physician education, feedback, and incentives. J Hosp Med. 2015;10:497-502. doi:10.1002/jhm.2373
23. Indovina K, Keniston A, Reid M, Sachs K, Zheng C, Tong A, et al. Real-time patient experience surveys of hospitalized medical patients. J Hosp Med. 2016;11:251-56. 2016/01/19. doi:10.1002/jhm.2533
24. Ferrari M. Improving patient experience in the inpatient setting. Robert Wood Johnson Foundation; 2012.
25. Hospital VBP Program aggregate payment adjustments. 2017, 2019. Retrieved and updated January 4, 2019 from: https://www.medicare.gov/hospitalcompare/data/payment-adjustments.html.
26. Boulding W, Glickman SW, Manary MP, Schulman KA, Staelin R. Relationship between patient satisfaction with inpatient care and hospital readmission within 30 days. Am J Manag Care. 2011;17:41-48.
27. Boccuti C, Casillas G. Aiming for Fewer Hospital U-turns: The Medicare Hospital Readmission Reduction Program. 2017. Retrieved December 20, 2017, from: https://www.kff.org/medicare/issue-brief/aiming-for-fewer-hospital-u-turns-the-medicare-hospital-readmission-reduction-program/.
28. Fottler MD, Ford RC, Heaton CP. Achieving Service Excellence: Strategies for Healthcare. Health Administration Press. 2002.

Author Biographies

Pankaj Kumar is medical director of Hospitals, High Point Medical Center and Assistant Professor of Internal Medicine at Wake Forest Baptist Health. Physician Leader and an experienced hospitalist, his focus is on patient safety, quality improvement and teaching value-based reimbursement strategies to faculty, medical student and graduate medical education. Pankaj pursued specialization in healthcare management with a Master of Business Administration (MBA) from Haslam College of Business, University of Tennessee as well as completed Advanced Training Program from Intermountain Healthcare, Salt Lake City, Utah. He is well versed with concepts of professional development, conflict management, organizational behavior and marketing, he is committed to improving the patient experience at High Point Medical Center through studying consumer and organizational research methods specifically probing, laddering interviews and hierarchical value mapping.

Michele Follen, MD, PhD, MBA, is the Director of Research and Director of Cancer Prevention and Cancer Services at Kings County Hospital part of New York City Health and Hospitals in Brooklyn, New York. Her research interests are in optical technologies and research design. She chaired the MEDI study section for the NIH for two years.

Chi-Cheng Huang is the executive medical director of General Medicine and Hospital Medicine at Wake Forest Baptist Health System, and the Chief of Hospital Medicine and an Associate Professor of Internal Medicine at the Wake Forest School of Medicine. He earned an undergraduate degree in biology from Texas A&M University and graduated cum laude in 1998 from Harvard Medical School. A physician leader and manager with experience in operations, strategy, and quality improvement. He has a proven track record of excellence and results in leading complex healthcare initiatives. Dr. Huang is a highly motivated, proactive, team-oriented physician who aims to provide high quality, cost effective, efficient, patient-centric care through collaboration. He has a proven talent analyzing root causes of problems, restructuring systems, and successfully implementing solutions within complex health systems.

Amy Cathey is a senior lecturer and executive director of Graduate and Executive Education in the Haslam College of Business at University of Tennessee, Knoxville. She has a strong commitment to enhancing patient satisfaction and the patient experience through use of customer value techniques. Amy teaches marketing in the Physician Executive MBA and Executive MBA for Healthcare Leadership programs and has served as an advisor for over 70 executive MBA organizational action projects.