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Transformational Change in Health Care Through Operational Excellence

Derek S. Wheeler, MD, MMM, MBA[*]
Barb Tofani, RN, MSN
Barry Morris, PhD

Address
[*]Cincinnati Children's Hospital Medical Center, 3333 Burnet Avenue, Cincinnati, OH, 45229-3039, USA
Email: Derek.Wheeler@cchmc.org

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Opinion statement

The USA has one of the most expensive health care delivery systems in the world. As a result, US hospitals are focusing on improving operational efficiency and safety in order to deliver higher value, in terms of outcomes, experiences, and costs. The kinds of change that are required are transformational in nature. Transformational change is a kind of continuous change that represents a fundamental shift in the priorities, strategies, and culture of an organization. Herein, we will review the concept of operational excellence as one management approach that has been used to achieve transformational change. Operational excellence is really about achieving process reliability through continuous process improvement, which translates to better outcomes, better experiences, and lower costs.

Introduction

There is a common refrain heard in many American hospitals today about the quality and cost of health care delivery. At the core of this refrain is the fact that the USA spends more money (both per capita and as a percentage of gross domestic product) on health care compared to the all of the other 34 industrialized countries in the Organisation for Economic Co-operation and Development (OECD). Despite this level of spending, the US health care system ranks comparatively low on a wide range of health indicators [1–6]. While the data generally speaks for itself, there are several additional considerations that should be taken into account. First, there is a

fundamental difference between acute health care delivery and chronic health care delivery. The US health care system has been designed to deliver acute care, as opposed to chronic care. Yet, individuals with chronic conditions account for a greater percentage of overall health care expenditures in the USA. For example, during 2009, the 5 % of the population with the highest spending on health care (all due to chronic conditions, such as coronary artery disease, cancer, COPD, and diabetes mellitus) accounted for nearly 50 % of all health care expenditures [7]. Perhaps, it should not come as a surprise that individuals with chronic medical conditions fare relatively worse in a health care delivery system that was designed first and foremost to address individuals with acute illness. Second, and perhaps more importantly, the US health care delivery system does a poor job of improving health; indeed, it was never designed for this purpose. Focusing on the so-called social determinants of health (poverty, access to food and water, sanitation, etc.) will likely do more to improve the overall health of a society than trying to improve an acute care delivery system [6, 8]. So when health policy experts state that Americans want (and deserve) the best *health care* system in the world, what they really mean is that Americans want and deserve the best *health delivery* system in the world!

With these considerations in mind, US hospitals are focusing on improving operational efficiency and safety in order to improve both the quality and value of health care delivery. There are a number of different management approaches to transformational change. Transformational change is organization-wide, continuous, and usually implemented over long periods of time [9]. This particular kind of change, as opposed to transitional change, involves a fundamental, almost paradigmatic shift in the priorities, strategies, and culture of the entire organization. Transitional change focuses on incremental change or replacement of existing processes. It is often reactive in nature, and in most cases, it is controlled, deliberate, and planned. The end-state is known and predictable [10, 11]. In contrast, transformational change involves more proactive, continuous change [12]. From a systems perspective, transformational change is emergent in that the end-state is often not exactly known [11, 13]. By its nature, transformational change involves re-engineering of the entire organization [14–16]. To paraphrase the National Hockey League Hall of Famer Wayne Gretsky, while transitional change involves "skating to where the puck is," transformational change involves "skating to where the puck is going."

There have been a number of different approaches to transformational change that have been used successfully in health care [12, 13]. Consistent themes have emerged regarding key drivers that are critical to the success of transformational change efforts. First, while senior leadership support is absolutely essential [12], the importance of committed, empowered, and accountable clinical leaders at the point of care cannot be emphasized enough [13, 16–19]. Given the multidisciplinary nature of health care today, physician and nurse leadership dyads working with multidisciplinary teams have been particularly successful [20–26]. The most successful organizations at transformational change provide their clinical leaders with the appropriate leadership skills training (which frequently include some degree of training in improvement science) and adequate resources. Physician leaders especially should be provided with time away from their clinical duties to work with their nursing partners and their teams. There are a variety of improvement tools available (e.g., Lean, Six Sigma, Total Quality Leadership/Total Quality Manufacturing, Theory of Constraints, Model for Improvement)—any of these tools, either in isolation or in some combination, have been used successfully in a number of organizations. However, a standardized approach using a common language to improvement should be used [16]. Clinically based improvement teams are generally supported by internal quality consultants, project managers, data analysts, and financial analysts in the most successful organizations [12–14]. As Bohmer [16] states, "Data are often the Achilles' heel" in any transformational change effort. For this reason, successful organizations pay particular attention to measurement systems and data management and analysis. Finally, and perhaps most importantly, any transformational change initiative should be consistent with, and adapted directly from, the organization's strategic plan, which in turn is consistent with and adapted directly from the organization's mission, vision, and core values [12, 14–16]. In this way, everyone from the board of trustees, chief executive officer, and senior leadership team to middle management and front-line clinical leaders and providers fully know why the organization exists and for what purpose, who they are as an organization and what they stand for, and where the organization is collectively going [27–29]. In many ways, the mission, vision, and core values are fundamental to the overall culture of an organization, which is fundamental to the success of any transformational change effort.

The three value disciplines

Treacy and Wiersema [30] noted in the early 1990s that the top performing companies, the companies that were the leaders in their industry, narrowed their business to focus on delivering superior value to their customers in one of three value disciplines—product leadership, customer intimacy, or operational excellence [31]. Importantly, these market leaders generated a sustainable competitive advantage through industry leadership in only one of these three value disciplines, while sustaining performance that met industry standards in the other two value disciplines.

An organization that chooses *customer intimacy* as its value discipline is interested in providing their customers with a total solution, not just a product or service. These organizations are passionate about helping the customer understand what is needed, ensuring a great solution is implemented, and having a great relationship with each and every customer. Structurally, decision-making is often delegated to employees who are closest to the customer. Importantly, market leadership in customer intimacy must be coupled product differentiation and operational efficiency—in other words, market leaders in customer intimacy sustain industry standard performance in the other two value disciplines.

An organization that chooses *product leadership* as its value discipline is focused on producing products or services that "continually redefine the state of the art" (Treacy and Wiersema, p.30) [30]. It is a focus on the core processes of invention, product development, and market exploitation. The structure of these organizations tends to be loosely defined in order to enable experimentation as well as creative and entrepreneurial behaviors that lead them into new solutions. Culturally, individual imagination, accomplishment, "out of the box" thinking, and a future oriented mindset are supported. Again, market leadership in product leadership must be coupled with operational efficiency and customer responsiveness.

Finally, organizations that embrace *operational excellence* are determined to "provide customers with reliable products and services at competitive prices, delivered with minimal difficulty or inconvenience" (Treacy and Wiersema, p.29) [30]. In these organizations, operations are standardized and tightly managed and employees are clear about their responsibilities and their authority. Management systems are focused on integrated, reliable, and high-speed transactions, and compliance to norms. In an effort to bring value to customers, these cultures focus on waste and reward efficiency. These organizations are also highly dependent on teamwork through which every team member holds every other team member accountable for achieving the organizations process and outcome measures. Treacy and Wiersema point out that operationally excellent organizations "run themselves like the Marine Corps: The team is what counts, not the individual. Everybody knows the battle plan and the rule book, and when the buzzer sounds everyone knows what he or she has to do. The heroes in this kind of organization are people who fit in, who came up through the ranks. They're dependable (under any circumstances); a promise is a promise and dedication is paramount" (Treacy and Wiersema, p.30) [30]. In operationally excellent organizations, the employee of the year is the best team player

and peer recognition is the best complement. Organizations that are market leaders in operational excellence must meet industry-level standards in the other two value disciplines—product differentiation and customer responsiveness.

Operational excellence in health care

Operational excellence is really about achieving process reliability through continuous process improvement. Avedis Donabedian proposed the *structure-process-outcomes* framework to achieve operational excellence. Only by putting the right structures in place with effective and reliable processes can the best outcomes be achieved. When outcomes are measured and followed closely, processes can be evaluated and changed or modified, when necessary and as appropriate, in order to produce even better outcomes [32]. Donabedian's *structure* refers to how a particular health care system is organized to deliver care. Structural elements can be easily recalled by the "P's and T's." The "two P's" refers to the people in the delivery system (patients and providers), while the "two T's" refers to the technology (e.g., health information technology, medical equipment) and therapy [33, 34]. *Processes* refer to how care is provided in the delivery system—for example, how different providers interact and work together to take care of patients. Finally, *outcomes* refer to the end points of care, encompassing quality measures such as survival, quality of life, staff experience, patient/family experience, length of stay, and costs [34].

Several health care systems have organized the structural elements of their delivery system using a systems engineering approach. The industrial engineering literature would describe an individual hospital as a macrosystem consisting of multiple, individual microsystems and mesosystems (Fig. 1). The Institute of Medicine suggested that focusing on how small clinical, unit-based teams function and interact with other unit-based teams will lead to transformational change of the overall health care delivery system in its report, *Crossing the Quality Chasm* [35]. W. Edwards Deming was one of the early "systems thinkers" and
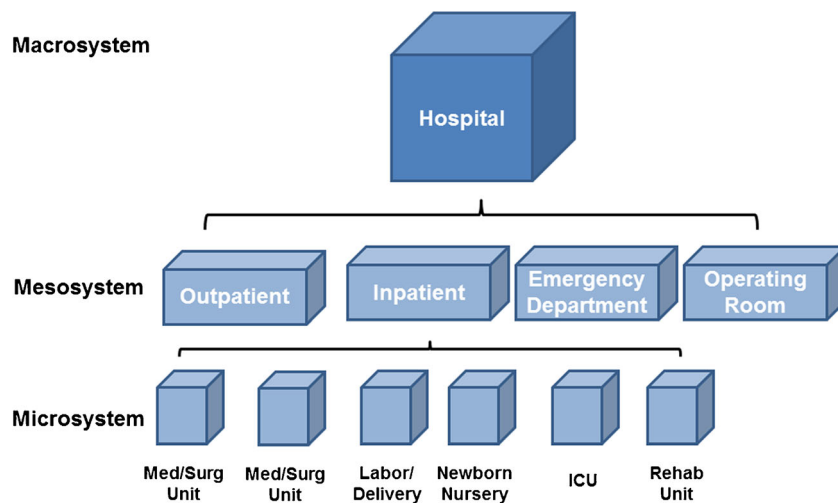

Fig. 1. Macrosystem.

suggested that organizations function best when their individual subcomponents work synergistically to achieve the overall goals and objectives of the larger system [36]. The business school professor, James Brian Quinn, noted that the top performing Fortune 500 companies all focused on their smallest replicable units, i.e., their individual microsystems [37]. Drs. Paul Batalden and Eugene Nelson adapted Deming's and Quinn's work to health care organizations, publishing a series of articles on "clinical microsystems" [38–50]. Our own institution adapted the "clinical microsystem" model, combined with an emphasis on training front-line, unit-based leaders in quality improvement and leadership skills [49, 51–53]. In addition, senior leaders, including the chief executive officer and members of the board of trustees, were trained in quality improvement and held hospital leaders accountable for improving safety, patient-family experience, and outcomes [54, 55].

Clinical microsystems appear to be another key driver of successful transformational change [12, 14, 16, 49], especially when the clinical microsystems are led by empowered, accountable clinical leaders who are trained in process improvement. Front-line leaders will be in the best position to fully know and understand how their individual microsystem functions best. Front-line leaders are ideally positioned to monitor key processes at the unit level and should be trusted to make the right decisions on how best to improve process reliability in order to achieve the best possible outcomes. Only through process reliability can excellence in operations be achieved. It then follows that operational excellence leads to improved outcomes.

Conclusion

Quality healthcare is a complex system of people and processes. When they work effectively together, health care organizations are capable of great clinical outcomes, patient, family, and employee experiences. This complexity requires that clinical leaders and managers and their line employees take full ownership of care, integrating all of the system knowledge and capability in direct service to the patient. Structuring an organization to enable the line to fully own the outcome produces results. Being collaborative across traditional health care boundaries ensures ones outcome is sustainable. The relationship between physicians, nurses, allied health professionals, patients, and families is a critical component of success in any operationally excellent organization.

Compliance with Ethical Standards

Human and Animal Rights and Informed Consent
This article does not contain any studies with human or animal subjects performed by any of the authors.

References and Recommended Reading

1. Anderson GF, Reinhardt UE, Hussey PS, Petrosyan V. It's the prices stupid: why the United States is so different from other countries. Health Aff. 2003;22:89–105.

2. Reinhardt UE, Hussey PS, Anderson GF. U.S. health care spending in an international context. Health Aff. 2004;23:10–25.

3. Anderson GF, Frogner BK. Health spending in OECD countries: obtaining value per dollar. Health Aff. 2008;27:1718–27.

4. McCarthy D, How SKH, Fryer A-K, Radley D, Schoen C. Why Not the Best? Results from the National Scorecard on U.S. Health System Performance, 2011. New York: The Commonwealth Fund; 2011 [cited 2016 August 27]; Available from: http://www.commonwealthfund.org/~/media/files/publications/fund-report/2011/oct/1500_wntb_natl_scorecard_2011_web_v2.pdf.

5. OECD. Health at a glance, 2015: OECD Indicators. Paris: OECD Publishing; 2015 [cited 2016 August 27]; Available from: http://dx.doi.org/10.1787/health_glance-2015-en.

6. Squires D, Anderson C. U.S. health care from a global perspective: spending, use of services, prices, and health in 13 countries. Issue Brief (Commonw Fund). 2015;15:1.

7. Schoenman JA, Chockley N. The concentration of health care spending. Washington, D.C.: National Institute of Health Care Management; 2012 [cited 2016 August 27]; July 2012:[Available from: http://www.nihcm.org/pdf/DataBrief3%20Final.pdf.

8. Bradley EH, Canavan M, Rogan E, Talbert-Slagle K, Ndumele C, Taylor L, et al. Variation in health outcomes: the role of spending on social services, public health, and health care, 2000-2009. Health Aff. 2016;35:760–8.

9. Doebbeling BN, Flanagan ME. Emerging perspectives on transforming the healthcare system: key conceptual issues. Med Care. 2011;49:S3–5.

10. Redfern S, Christian S. Achieving change in health care practice. J Eval Clin Pract. 2003;9:225–38.

11. Alas R. Organizational change from learning perspective. Problems and perspectives in management. 2007. p. 5.

12. Lukas CVD, Holmes SK, Cohen AB, Restuccia J, Cramer IE, Shwartz M, et al. Transformational change in health care systems: an organizational model. Health Care Manag Rev. 2007;32:309–20.

13. Wang MC, Hyun JK, Harrison MI, Shortell SM, Fraser I. Redesigning health systems for quality: lessons from emerging practices. Jt Comm J Qual Patient Saf. 2006;32:599–611.

14. Lee S-YD, Weiner BJ, Harrison MI, Belden CM. Organizational transformation: a systematic review of empirical research in health care and other industries. Med Care Res Rev. 2012;70:115–42.

15. Hunter DJ, Erskine J, Small A, McGovern T, Hicks C, Whitty P, et al. Doing transformational change in the English NHS in the context of "big bang" redisorganisation. J Health Organ Manag. 2015;29:10–24.

16. Bohmer RMJ. The hard work of health care transformation. N Engl J Med. 2016;375:709–11.

17. Embertson MK. The importance of middle managers in healthcare organizations. J Healthc Manag. 2006;51:223–32.

18. Inamadar SN, Osland A, Wells P. Restructuring with the middle-management advantage. Health Care Manag. 2010;29:305–17.

19. Parand A, Dopson S, Renz A, Vincent C. The role of hospital managers in quality and safety: a systematic review. BMJ Open. 2014;4:e005055.

20. Zismer DK, Brueggemann J. Examining the "dyad" as a management model in integrated health systems. Physician Exec. 2010;36:14–9.

21. Baldwin KS, Dimunation N, Alexander J. Health care leadership and the dyad model. Physician Exec. 2011;37:66–70.

22. Patton P, Pawar M. New clinical executive models: one system's approach to chief nursing officer-chief medical officer co-leadership. Nurs Admin Q. 2012;36:320–4.

23. St Fleur R, McKeever J. The role of the nurse-physician leadership dyad in implementing the Baby-Friendly Hospital Initiative. Nurs Womens Health. 2014;18:231–5.

24. Sanford K, Moore S. Dyad leadership in healthcare: when one plus one is greater than two. Philadelphia: Wolters Kluwer; 2015.

25. Oostra RD. Physician leadership: a central strategy to transforming healthcare. Front Health Serv Manage. 2016;32:15–26.

26. Hemker RA, Solomon LA. Building a physician culture for healthcare transformation: a hospital's leadership challenge. Front Health Serv Manage. 2016;32:3–14.

27. Kirch DG, Grigsby RK, Zolko WW, Moskowitz J, Hefner DS, Souba WW, et al. Reinventing the academic health center. Acad Med. 2005;80:980–9.

28. Moghal N. Mission, vision, and values statements in healthcare: what are they for? BMJ. 2012;344:e4331.

29. Donnellan JJJ. A moral compass for management decision making: a healthcare CEO's reflections. Front Health Serv Manage. 2013;30:14–26.

30. Treacy M, Wiersema F. The discipline of market leaders. New York: Perseus Publishing; 1997.

31. Treacy M, Wiersema F. Customer intimacy and other value disciplines. Harv Bus Rev. 1993;71:84–93.

32. Donabedian A. Evaluating the quality of medical care. Milbank Mem Fund Q. 1966;44:166–206.

33. Wheeler DS. Organization-wide approaches to patient safety. Innov Entrepreneurship Health. 2015;2:49–57.

34. Riley C, Poss WB, Wheeler DS. The evolving model of pediatric critical care delivery in North America. Pediatr Clin North Am. 2013;60:545–62.

35. America. IoMCoQoHCi. Crossing the quality chasm: a new health system for the 21st century. Washington: National Academy Press; 2001.

36. Deming WE. The new economics: for industry, government, education. Cambridge: MIT Press; 2000.

37. Quinn JB. Intelligent enterprise: a knowledge and service based paradigm for industry. New York: Free Press; 1992.

38. Nelson EC, Batalden PB, Huber TP, Mohr JJ, Godfrey MM, Headrick LA, et al. Microsystems in health care: part 1. Learning from high-performing front-line clinical units. Jt Comm J Qual Improv. 2002;28:472–93.

39. Nelson EC, Batalden PB, Homa K, Godfrey MM, Campbell C, Headrick LA, et al. Microsystems in health care: part 2. Creating a rich information environment. Jt Comm J Qual Saf. 2003;29:5–15.

40. Godfrey MM, Nelson EC, Wasson JH, Mohr JJ, Batalden PB. Microsystems in health care: part 3. Planning patient-centered services. Jt Comm J Qual Saf. 2003;29:159–70.

41. Wasson JH, Godfrey MM, Nelson EC, Mohr JJ, Batalden PB. Microsystems in health care: part 4. Planning patient-centered care. Jt Comm J Qual Saf. 2003;29:227–37.

42. Batalden PB, Nelson EC, Mohr JJ, Godfrey MM, Huber TP, Kosnik L, et al. Microsystems in health care: part 5. How leaders are leading. Jt Comm J Qual Saf. 2003;29:297–308.

43. Mohr JJ, Barach P, Cravero JP, Blike GT, Godfrey MM, Batalden PB, et al. Microsystems in health care: part 6. Designing patient safety into the microsystem. Jt Comm J Qual Saf. 2003;29:401–8.

44. Kosnik L, Espinosa JA. Microsystems in health care: part 7. The microsystem as a platform for merging strategic planning and operations. Jt Comm J Qual Saf. 2003;29:452–9.

45. Huber TP, Godfrey MM, Nelson EC, Mohr JJ, Campbell C, Batalden PB. Microsystems in health care: part 8. Developing people and improving work life: what front-line staff told us. Jt Comm J Qual Saf. 2003;29:512–22.

46. Batalden PB, Nelson EC, Edwards WH, Godfrey MM, Mohr JJ. Microsystems in health care: part 9. Developing small clinical units to attain peak performance. Jt Comm J Qual Saf. 2003;29:575–85.

47. Nelson EC, Godfrey MM, Batalden PB, Berry SA, Bothe AEJ, McKinley KE, et al. Clinical microsystems, part 1. The building blocks of health systems. Jt Comm J Qual Patient Saf. 2008;34:367–78.

48. Godfrey MM, Anders SG, Moore LG, Ho L, Nelson EC, Godfrey MM, et al. Clinical microsystems, part 2. Learning from micro practices about providing patients the care they want and need. Jt Comm J Qual Patient Saf. 2008;34:445–52.

49. Godfrey MM, Melin CN, Muething SE, Batalden PB, Nelson EC. Clinical microsystems, part 3. Transformation of two hospitals using microsystem, mesosystem, and macrosystem strategies. Jt Comm J Qual Patient Saf. 2008;34:591–603.

50. McKinley KE, Berry SA, Laam LA, Doll MC, Brin KP, Bothe AEJ, et al. Clinical microsystems, part 4. Building innovative population-specific mesosystems. Jt Comm J Qual Patient Saf. 2008;34:655–63.

51. Kaminski GM, Schoettker PJ, Alessandrini EA, Luzader C, Kotagal U. A comprehensive model to build improvement capability in a pediatric academic medical center. Acad Pediatr. 2014;14:29–39.

52. Kaminski GM, Britto MT, Schoettker PJ, Farber SL, Muething S, Kotagal UR. Developing capable quality improvement leaders. BMJ Qual Saf. 2012;21:903–11.

53. Britto MT, Anderson JM, Kent WM, Mandel KE, Muething SE, Kaminski GM, et al. Cincinnati Children's Hospital Medical Center: transforming care for children and families. Jt Comm J Qual Patient Saf. 2006;32:541–8.

54. Millar R, Mannion R, Freeman T, Davies HT. Hospital board oversight of quality and patient safety: a narrative review and synthesis of recent empirical research. Milbank Q. 2013;91:738–70.

55. Joshi MS, Hines SC. Getting the board on board: engaging hospital boards in quality and patient safety. Jt Comm J Qual Patient Saf. 2006;32:179–87.