

The Current State of Physician Leadership Training

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What is the message?

The US spends almost one-fifth of its GDP on healthcare yet lags behind other developed countries in many outcome measures. Physician leadership training can play a pivotal role in improving health outcomes in an increasingly complex and fragmented healthcare system. However, the training must go beyond the traditional approach of developing intellectual competencies to also focus on less tangible qualities such as character building and emotional intelligence. The studies also show that harnessing technologies such as a smartphone app in addition to proven teaching methods such as coaching can improve different aspects of learning outcomes. Additionally, employing a case-based longitudinal curriculum with a strong practical component can demystify leadership, allowing participants to practice the skills and competencies learned in the training. Physician leadership training, together with other timely interventions, may help bridge the discrepancy between healthcare spending and outcomes.

What is the evidence?

This article is an annotated bibliography of physician leadership training, including articles published in the last five years that describe either a study to better understand perceptions of leadership among physicians, or an intervention for which the primary purpose was to promote leadership competency in physicians.

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Introduction

There is a large discrepancy between healthcare spending and outcomes in the United States. In 2017, the US spent 17.2% of its GDP on healthcare, significantly more than any other developed country[1]. This figure is projected to grow to 19.4% by 2027[2]. Unfortunately, higher healthcare spending in the US does not necessarily translate to better health outcomes. In a study published in the Lancet last May, the US ranks 29th out of 195 countries on the Healthcare Access and Quality (HAQ) Index, which measures age- and risk-standardized mortality rates for 32 causes of death considered preventable by effective care[3].

Although the reasons for the discrepancy between healthcare spending and outcomes in the US are manifold, one would be hard-pressed to argue that the complexity and fragmentation of the US healthcare system does not play a role. The growth in medical knowledge and technology has naturally resulted in hyperspecialization. However, the unintended consequence is the fragmentation of care, wherein each specialist works in a silo and the primary care physician neither has enough time nor resources to properly coordinate care. Moreover, the US healthcare system has multiple stakeholders – providers, patients, insurance companies, and biomedical companies, to name a few – who often have conflicting interests.

Physician leadership training has been touted as a potential solution to some of the shortcomings of our healthcare system. Traditionally, medical education has concerned itself with the acquisition of medical knowledge and skills, and barely grazes the surface on important systemic issues such as population health, health policy, and health management. Physicians thus complete their training prepared to treat patients but not necessarily to lead or affect change on a larger scale. However, there has been an increasing consensus on the need to incorporate leadership training into medical education. One study of almost 1200 hospitals

across seven countries found that hospitals with higher management-practice scores had better clinical outcomes and better financial performance[4]. This suggests that a greater emphasis on management practices, including physician leadership training, can contribute to improving both the quality and cost-efficiency of healthcare.

Methods

The goal of this study was to compile an annotated bibliography on physician leadership training. We included only articles published within the last five years in order to focus on recent findings. We used the keywords “physician leadership training” to run a search on PubMed and selected articles written in English and published from 2014 to May 2019 describing either a study to better understand perceptions of leadership among physicians, or an intervention for which the primary purpose was to promote leadership competency in physicians. We also found some articles in print using the same inclusion criteria.

Results

1. Cerrone SA, Adelman P, Akbar S, Yacht AC, Fornari A. Using Objective Structured Teaching Encounters (OSTEs) to prepare chief residents to be emotionally intelligent leaders. Medical Education Online. 2017 May 2;22(1):1320186. doi:10.1080/10872981.2017.1320186.

This article describes a program designed to prepare incoming chief residents (CRs) at Northwell Health for their leadership role. In the first part, CRs completed an emotional intelligence (EI) inventory and received their results along with feedback on their strengths and weaknesses. The second and third parts took place over a day and consisted of interactive sessions on leadership, management, and feedback skills, followed by OSTEs simulating scenarios in which junior residents presented with difficult interpersonal and professionalism situations. Each CR completed two OSTEs and was evaluated by the actor, a peer observer, and the CR on the use of skills taught during the earlier interactive sessions. The program succeeded at three levels of Kirkpatrick’s evaluation model: CRs had a positive reaction, with 92% agreeing that their learning needs were met (Level 1). CRs also learned new knowledge and skills, as evident from the statistically significant increase in the average score between the first and second OSTEs (Level 2). Finally, the knowledge and

skills learned will likely lead to improved work performance, with 76% agreeing that the course would help them become more effective at work (Level 3).

2. Ginzburg SB, Deutsch S, Bellissimo J, Elkowitz DE, Stern JN, Lucito R. Integration of leadership training into a problem/case-based learning program for first- and second-year medical students. *Advances in Medical Education and Practice*. 2018 April 9;9:221-226. doi:10.2147/amep.s155731.

The authors describe the integration of a leadership training program called Patient-Centered Explorations in Active Reasoning, Learning and Synthesis (PEARLS) into the case-based learning curriculum for first- and second-year medical students at Zucker School of Medicine at Hofstra/Northwell. Students met in small groups three times per week. They focused on two cases per week, developing their own learning objectives and taking turns leading case-based discussions. Students received individual feedback and assessments at the middle and end of each course. Results from the assessment forms were used to evaluate the impact of PEARLS on students' leadership skills. The skills that improved the most were related to process improvement and thinking outside the box. Notably, PEARLS allowed students to develop leadership skills without impairing USMLE Step 1 scores or adding more time to the curriculum.

3. Green WM, Farquhar C, Mashalla Y. The Afya Bora Fellowship: An Innovative Program Focused on Creating an Interprofessional Network of Leaders in Global Health. *Academic Medicine*. 2017 Sep;92(9):1269-1273. doi:10.1097/acm.0000000000001856.

The Afya Bora Fellowship is a one-year fellowship designed to train doctors, nurses, and public health professionals to take on leadership roles in global health. It was founded in 2011 by the Afya Bora Consortium which originally consisted of eight universities in Botswana, Kenya, Tanzania, Uganda, and the US and has since expanded to include Cameroon. The program teaches leadership and management skills via 8 weeks of classroom-based learning, four distance learning modules, and two 4.5-month experiential apprenticeship opportunities. Modules are case-based and focused on leadership training, monitoring and evaluation, research processes, global health policy, implementation science, and HIV/AIDs as a global challenge. Meanwhile, apprenticeship opportunities are offered at local institutions in order to retain talent and build local capacity, or in the case of US fellows to provide a more nuanced understanding of global health issues. The fellowship

also provides support to alumni via networking opportunities and financial awards. Most fellows have returned to their countries of origin and taken up leadership opportunities. In 2015-16, all mentors reported the fellows had a significant impact on their site and 61% of mentors reported seeing growth in leadership skills among fellows.

4. Hartzell JD, Yu CE, Cohee BM, Nelson MR, Wilson RL. Moving Beyond Accidental Leadership: A Graduate Medical Education Leadership Curriculum Needs Assessment. *Military Medicine*. 2017 Jul 1;182(7):1815-1822. doi:10.7205/milmed-d-16-00365.

The investigators surveyed trainees and faculty members at Walter Reed on their perceived need for a leadership curriculum, the presence of a formal leadership curriculum in their department, and the content, format and timing that they would like to see in a leadership curriculum. Only 17% of participants reported the presence of a formal leadership curriculum in their department, even though the average participant rated their current leadership skills as only slightly better than moderately effective. The topics perceived to be the most important were conflict resolution, motivating a subordinate, and implementing change. Formats perceived to be the most effective were case studies and small group exercises, whereas reflective writing and online presentations were rated as the least effective. The results of this study could be used to guide the design and implementation of a formal leadership training curriculum for physicians.

5. Helitzer DL, Newbill SL, Cardinali G, Morahan PS, Chang S, Magrane D. Narratives of Participants in National Career Development Programs for Women in Academic Medicine: Identifying the Opportunities for Strategic Investment. *Journal of Women's Health*. 2016 Apr 13;25(4):360-370. doi:10.1089/jwh.2015.5354.

The authors conducted phone interviews of 45 women faculty who participated in at least one of three national career development programs (CDPs) for women from 1988 to 2010: Early-Career Women in Medicine (EWIM), Mid-Career Women in Medicine (MWIM), and Executive Leadership in Academic Medicine (ELAM). The most commonly cited reasons for enrolling in the CDPs were to reduce isolation, network with other women faculty, find women mentors, and to gain skills that would help advance their careers. Interviewees cited institutional support, including financial support and a culture of advocacy for women, as promoting their participation in the CDPs. Additionally, interviewees reported several positive outcomes from the CDPs, including skill development, academic advancement,

increased organizational visibility, and a broader perspective of the institutional culture. However, most interviewees agreed that after attending the CDP, the sponsoring institutions did little to seek out their newly acquired skills and insight in creating formal initiatives for women in academic medicine; instead, any such initiatives had resulted from the interviewees' own efforts. The authors suggest that CDPs could make a bigger and more sustainable impact on achieving gender equity in academic medicine when combined with strategic, intentional support of the sponsoring institutions.

6. Hopkins J, Fassiotto M, Ku MC, Mammo D, Valentine H. Designing A Physician Leadership Development Program Based on Effective Models of Physician Education. *Health Care Management Review*. 2018 Oct 1;43(4):293-302. doi:10.1097/hmr.000000000000146.

This article describes the implementation and outcomes of the Stanford Leadership Development Program. The program uses a framework developed by education researcher M.D. Merrill which describes the "Activation-Demonstration-Application-Integration" sequence towards effectively learning a new knowledge or skill. Participants completed baseline assessments and received feedback on their strengths and weaknesses (Activation). Then, in six sessions spread out over nine months, participants learned principles of leadership and organizational management using proven educational methods such as case-based learning (Demonstration). Participants then completed leadership projects tailored to their own roles (Application). Finally, participants presented the outcomes of their projects (Integration). The program succeeded on all levels of the Kirkpatrick evaluation model. The program was given an average rating of 4.5 out of 5 (Level 1: Reaction). In addition, pre- and post-survey results showed significant improvements in self-assessed leadership knowledge, skills, and attitudes (Level 2: Learning). More than 80% of participants reported plans to use their new leadership knowledge and skills (Level 3: Behavior). Lastly, 100% of participants completed their experiential projects (Level 4: Results).

7. Jha P, Quinn B, Durbin S, Bhandari S. Perceptions of Junior Faculty in General Internal Medicine Regarding Mentoring Medical Students and Residents in Scholarly Projects. *Journal of General Internal Medicine*. 2019 Mar 18. doi:10.1007/s11606-019-04937-4.

The goal of this study is to survey junior faculty members on their perceptions towards the

benefits of mentoring, barriers to mentoring, and ways to overcome those barriers. A survey was sent out to all 50 assistant professors in General Internal Medicine at the Medical College of Wisconsin, with a response rate of 68%. Of those, only 38% reported mentoring resident and student projects in their first year as faculty, and only 50% were involved in mentoring after the first year. Involvement in mentoring did not increase with the number of years spent as faculty. The perceived benefits of mentoring include enhanced CV and publication, critical thinking, medical knowledge, leadership, networking and collaboration, and fulfilling teaching requirements. The perceived barriers were inadequacies in resources/training, time, institutional support, faculty development, and structured mentorship programs. The perceived solutions were, among others, protected time for mentorship, financial and non-financial incentives, institutional support, coordinating with experts, and structured peer mentorship programs.

8. Könings KD, Berlo JV, Koopmans R, et al. Using a Smartphone App and Coaching Group Sessions to Promote Residents' Reflection in the Workplace. *Academic Medicine*. 2016 Mar 1;91(3):365-370. doi:10.1097/acm.0000000000000989.

This study explores the impact of a smartphone app and coaching sessions on residents' reflection in the workplace. 64 residents were randomly assigned into four groups: app-only, coaching-only, both, and neither. The app was designed to capture learning moments in real-time as text, pictures, audio, or video. The nonapp group was instructed to capture learning moments as they normally would, such as memorizing or writing them down. Coaching groups met every other week to discuss learning moments; participants were required to submit these moments before each session. In contrast, non-coaching groups were required to fill out and submit reflection forms at the same interval. All participants filled out pre- and post-test questionnaires regarding the amount learned, alertness to learning moments, and follow-up activities pursued. The frequency of reflection was measured by the number of app entries, cases submitted before coaching sessions, or experiences included on the reflection form. App users reflected more often and reported greater learning progress than nonapp users. Participants that received coaching were more alert to learning moments and pursued more follow-up activities. Those who received both types of support had the highest alertness to learning moments.

9. Lawson L, Lake D, Lazorick S, Reeder T, Garriss J, Baxley EG. Developing Tomorrow's

Leaders: A Medical Student Distinction Track in Health System Transformation and Leadership. *Academic Medicine*. 2019 Mar;94(3):358-363.

This article describes a medical student distinction track in health system transformation and leadership called the Leaders in Innovative Care Scholars Program at East Carolina University, focusing on the program's summer immersion experience. The eight-week summer session took place between the first two years of medical school, during which participants completed reading and writing assignments, discussions, presentations, skills sessions, experiential activities, and finally a clinical improvement project. The three evaluation tools included a pre- and post-program knowledge test, pre- and post-program self-assessment, and a program evaluation. 93% of participants rated the summer experience as valuable/highly valuable. After the summer program, participants' knowledge score increased by an average of 17 points; in addition, their self-assessed skills and knowledge in patient safety, quality improvement, team-based care, population health, and leadership skills all showed significant improvements.

10. Palamara K, Kauffman C, Chang Y, et al. Professional Development Coaching for Residents: Results of a 3-Year Positive Psychology Coaching Intervention. *Journal of General Internal Medicine*. 2018 Nov;33(11):1842-1844.

This article describes a professional development program for internal medicine residents at Massachusetts General Hospital. The program focuses on positive psychology principles. Residents are assigned a faculty coach outside of their specialty with whom they meet at least three times a year over the course of three years. Year 1 focuses on strengths exploration, building resilience, and finding meaning in work. Year 2 builds on the foundation from Year 1 with the addition of leadership skills and emotional intelligence. Year 3 builds on the previous two years with the addition of authentic leadership, finding a purpose, and cultivating life lessons. At the end of the program, participants were asked to evaluate the quality of communication with their coaches and opportunities for reflection, and to indicate if they believe the coaching program has improved their ability to cope with challenges. The results showed that participants who rated the quality of communication with their coaches as good/excellent reported higher coping skills and better work relationships. In contrast, residents who rated their opportunities for reflection as fair/poor were more likely to report higher emotional exhaustion.

11. Rosenbaum L. Divided We Fall. New England Journal of Medicine. 2019 Feb 14;380(7):684-688.

This article is Part 1 in a three-part series on Teamwork. In this part, the author explores the barriers to collaboration in medicine. She starts off with the paradox that “though medicine can offer patients more than ever before, we rely on increasing numbers of people to do it” and suggests that the hyperspecialization of modern medicine is part of the reason for the fragmented care and breakdowns in communication. Another factor that contribute to communication errors include many doctors’ unwillingness to acknowledge uncertainty or ask questions. The author then introduces Crew Resource Management (CRM), a type of team training in aviation safety that focuses on building a culture of shared responsibility. It was developed based on findings from a NASA-sponsored teamwork simulation study and has been endorsed by the Institute of Medicine to reduce medical errors. The author concludes that this will not be an easy fix; instead, it would require both introspection and an empirical study of teamwork in medicine.

12. Rosenbaum L. Cursed by Knowledge – Building a Culture of Psychological Safety. New England Journal of Medicine. 2019 Feb 21;380(8):786-790.

This article is Part 2 of a three-part series on Teamwork. The author introduces us to the importance of psychological safety, i.e. the willingness to take interpersonal risks such as admitting mistakes and asking questions, in promoting a collaborative work environment. There is an absence of psychological safety in medicine, which stems partly from the antagonism between physicians. A study found that nearly a third of physicians in the UK experienced “rude, dismissive, and aggressive” communication from other physicians multiple times per week and that 40% said it moderately or severely affected their workdays, with 7% saying that it led to errors. The author goes on to explore other factors that may contribute to the absence of psychological safety in medicine. For instance, with lives at stake, most physicians understandably feel the need to always appear smart and competent, and thus may not feel comfortable owning up to their mistakes or expressing uncertainty. Furthermore, the hyperspecialization of modern medicine leads to “the curse of knowledge” – that is, when we know something, it is difficult to recognize that someone else does not, thus posing another challenge to communication and collaboration.

13. Rosenbaum L. The Not-My-Problem Problem. New England Journal of Medicine. 2019 Feb

28;380(9):881-885.

This article is Part 3 of a three-part series on Teamwork. The author discusses the fragmentation of patient care and a few features of our healthcare system that contribute to it, including hyperspecialization and shift work, and uses social psychology to try to explain it. She posits that the bystander effect, in which individuals are less willing to act in a crisis if others are present, can help us understand the difficulty in collaboration when it comes to patient care. Furthermore, the sheer number of healthcare professionals on a patient care team often leads to the diffusion of responsibility. Outside of true emergencies such as a code resuscitation, physicians often struggle to work together efficiently as a team. For instance, in caring for a complex patient, it might be easy to assume that others involved have already thoroughly considered the case, and therefore hesitate to speak up when something does not feel right. Research on the bystander effect suggests that context – such as situational cues – is more important than character or disposition in influencing helping behavior. The author suggests that there should be more research on how our social environments influence the quality of medical care that we deliver, including our ability to work together effectively. In other words, we should invest more in social sciences research in healthcare and use the research findings to shape our social environments in a way that optimizes the quality of care.

14. Saravo B, Netzel J, Kiesewetter J. The need for strong clinical leaders – Transformational and transactional leadership as a framework for resident leadership training. Plos One. 2017 Aug 25;12(8). doi:10.1371/journal.pone.0183019.

In the IMPACT study, the investigators assess the effectiveness of a four-week program designed to teach residents across multiple specialties transactional and transformational leadership skills. Transactional leadership uses extrinsic rewards to motivate followers, whereas transformational leadership appeals to inspirational motivation or intrinsic rewards. The program spanned over four weeks, with 2.5-hour sessions per week and consisted of didactics, simulations, feedback sessions, and skills workshops. The leadership skills of each participant were scored before and after the program (1) by a blinded external evaluator using a performance scale and (2) by self-assessment using both a performance scale and a knowledge test. After the four-week program, the average score based on the external evaluator increased by 15% in transactional leadership performance and 14% in transformational leadership performance. Similarly, the average score based on self-

assessment before and after the program saw increases of 4% and 6% in transactional and transformational leadership performance, respectively.

15. Sultan N, Torti J, Haddara W, Inayat A, Inayat H, Lingard L. Leadership Development in Postgraduate Medical Education: A Systematic Review of the Literature. *Academic Medicine*. 2019 Mar;94(3):440-449.

This is a systematic literature review on leadership development interventions for residents. The inclusion criteria were peer-reviewed articles written in English and published between 1980 and May 2, 2017 describing interventions aimed at developing leadership competencies. The authors used Kirkpatrick effectiveness scores and Best Evidence in Medical Education (BEME) Quality of Evidence scores to assess the effectiveness of different interventions. From the 21 studies included, the most common setting was classroom and the most common instructor type was clinical faculty. Most studies used at least two pedagogical methods, most commonly small group learning, didactics, and independent learning. Most studies focused on competencies under the cognitive domain, i.e. related to intellectual competencies, instead of character or emotional intelligence. The average Kirkpatrick score was 1.0 (Reaction: Change in learner's attitude). The average BEME score was 2 (Results ambiguous, but there appears to be a trend). In conclusion, the interventions appear to have poor outcomes. The authors suggest that future interventions should be grounded in evidence-based conceptual frameworks and include the development of skills and knowledge related to character building and emotional intelligence.

Conclusion

There is increasing recognition both in the US and other countries of the importance of physician leadership training. Numerous medical schools and hospitals have started incorporating formal leadership training programs into their curriculum. A review of the current literature has shown that many studies seem to have good outcomes, although admittedly the outcomes are subjective and difficult to measure. Future investigators might consider using a more standardized evaluation process. One evaluation model that has been validated and used in a few studies is Kirkpatrick's Evaluation Model, which describes the four levels of evaluating any learning process: Reaction (i.e. how satisfied learners were with the process), Learning (i.e. the extent to which new knowledge and skills were acquired), Behavior (i.e. behavioral or

performance-related changes resulting from the new knowledge and skills acquired), and Results (i.e. tangible results such as increased productivity).

Lessons from specific studies include the importance of not simply approaching leadership training as a list of competencies to master, but to also focus on less tangible qualities such as character building and emotional intelligence. Another lesson is the importance of a longitudinal curriculum with a strong practical component and an ongoing support network, as seen in the Afya Bora Fellowship. Part of the utility of the practical component lies in its ability to demystify leadership, allowing the participants to practice the skills and competencies learned in the classroom. Ongoing support is necessary to help trainees receive real-time feedback and advice.

Lastly, physician leadership training has the potential to have a far-reaching impact. Physician leaders can go on to train and mentor others, thus extending the benefits of leadership training beyond themselves. Furthermore, the knowledge and skills acquired are highly transferable, enabling physicians to lead and affect change on a larger scale than that afforded by the doctor-patient relationship alone. For instance, at the hospital level, physician leaders can adopt management practices that lead to more cost-effective and high-quality care, while at the policy level, they can advocate for changes that will increase coverage and affordability for their patients. Thus, together with other timely interventions, physician leadership training is an important step towards solving the fragmentation of our healthcare system and bridging the discrepancy between our healthcare spending and outcomes.

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