Original Publication

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Leadership and Academic Medicine: Preparing Medical Students and Residents to Be Effective Leaders for the 21st Century

Joel Dickerman, MD, John P. Sánchez, MD*, Maria Portela-Martinez, MD, Eneida Roldan, MD

*Corresponding author: jps304@njms.rutgers.edu

Citation: Dickerman J, Sánchez JP, Portela-Martinez M, Roldan E. Leadership and academic medicine: preparing medical students and residents to be effective leaders for the 21st century. *MedEdPORTAL*. 2018;14:10677. https://doi.org/10.15766/mep_2374-8265.10677

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Abstract

Introduction: Physician leadership positions have evolved from autonomous roles in clinical medicine to those of leaders in interdisciplinary teams managing population-based care in a value-based care-delivery system, to C-suite administrative roles in hospitals and other health care systems. Unfortunately, many practicing physicians are ill prepared to take on these new roles. **Methods:** In response to the evolution of the role of the physician leader in the 21st century, an educational workshop consisting of didactics and interactive case discussion was developed to introduce medical students and residents to the concepts and practices of physician leadership. During the workshop, trainees were: (1) introduced to leadership terms and theories, (2) provided examples of leadership opportunities during medical training and upon entering medical practice, and (3) given instruction and resources on how to become more effective leaders. **Results:** Results of a paired-sample *t* test of learner responses (pre- and postworkshop) showed a statistically significant increase in participants' perception that a career in academic medicine would allow them to serve in a leadership role at their medical school or community of interest. Over 90% of participants agreed that the workshop gave them a greater appreciation of leadership terms and theories, leadership opportunities, and ways to become a more effective leader. **Discussion:** Participants gained specific knowledge regarding leadership styles and the scope of leadership roles available to physicians. They also recognized their lack of knowledge regarding physician leadership roles and opportunities, and expressed their interest in pursuing leadership opportunities in their current educational programs.

Keywords

Leadership, Academic Medicine

Appendices

- A. Leadership PPT Presentation.pptx
- B. Leadership Facilitator Guide.docx
- C. Leadership Worksheet.doc
- D. Case Scenario Handout .docx
- E. Leadership Train the Trainer Video.mp4
- F. Leadership Evaluation Form .docx

All appendices are peer reviewed as integral parts of the Original Publication.

Educational Objectives

By the end of this module, learners will be able to:

1. Describe leadership terms and theories.
2. List leadership opportunities.
3. Describe ways to become a more effective leader.

Introduction

The role of the physician leader has evolved in the last 10 years. Traditionally, physicians led teams of health care workers, such as surgical or trauma teams, in the command role. The goal was centered on the care management of a single patient. Health care reform and the development of the triple aim (better population care, better patient experience, better value) expanded the physician leadership role to include the leading of and participation in interdisciplinary teams and managing population-based care, with a central focus on quality performance and improvement, all integral in a value-based health care environment.¹⁻⁴ In the evolution of physician leadership roles, physicians have risen to be administrators of physician groups, academia, and the C-suite in diverse health care delivery systems.

The rapid growth in the breadth and depth of the physician leadership role requires a different skill set from that currently taught to medical students and physicians in training. Physicians are now faced with a

gap in the skills required to fulfill leadership roles. A number of medical schools,⁵⁻⁷ residencies,^{8,9} and faculty development programs^{10,11} are starting to provide formal training in leadership skills. This type of training is still not a required curriculum element in all programs. Given all of the competing responsibilities and requirements for students, residents, and faculty, it is understandable why they may not voluntarily seek leadership training on their own during medical training. As a result, medical students, residents, and faculty may be hesitant to engage in leadership roles, and unlikely to consider a career in administrative medicine. A possible solution would be to introduce leadership roles to medical students and residents in a comfortable, nonthreatening environment, allowing them to engage in leadership training early in their careers.

Observing leadership activities in clinical faculty has not proven to help medical residents adopt leadership skills,¹² whereas objective structured teaching encounters (OSTEs) have been shown to assist in preparing chief residents to become emotionally intelligent leaders.¹³ Brief formats such as OSTEs and workshops have the advantage of providing a focused educational experience without infringing on the rigors of clinical training. Although brief, these formats may help residents and students to undertake leadership roles later in life. Both previous leadership training and younger age are predictors of leadership activities in academic faculty.¹⁴

In the winter of 2015, the Building the Next Generation of Academic Physicians (BNGAP) initiative developed the current workshop targeting medical students and residents. This workshop is focused on raising trainees' awareness of leadership opportunities and activities during their training to better prepare for a future career in academic medicine. Whereas several previous *MedEdPortal* publications on leadership focused on developing leadership skills for faculty or a limited number of residents,^{8,15,16} or on the specific topic of quality improvement/patient safety,¹⁷ this workshop introduces medical students and residents to the range of leadership responsibilities and opportunities available during training and clinical practice. In addition, the workshop provides participants with an opportunity to apply leadership skills and principles to simulated cases. The four coauthors have all been involved in the development and/or revision of the workshop, and a BNGAP curriculum committee comprising 25 diverse trainees and educational leaders from across the country reviewed and further commented on the workshop. The six-step Kern model¹⁸ was applied as a framework for the design, implementation, and evaluation of the workshop:

1. *Problem identification and general needs assessment:* These were accomplished through a literature review and input from the BNGAP curriculum committee.
2. *Targeted needs assessment:* This was done via a set of mixed-methods studies of diverse trainees' perceptions of academic medicine careers, including facilitators and barriers to and resources needed for further development.
3. *Goals and objectives:* The aforementioned gathered information helped to determine and develop the three learning objectives of this module: Describe leadership terms and theories, list leadership opportunities, and describe ways to become a more effective leader.
4. *Educational strategies:* To maintain active participation of attendees during the session, both reflection exercises and small- and large-group discussions were included in addition to the didactic portion. Given the importance of role modeling, speakers were asked to share the successes and challenges of their leadership experiences.
5. *Implementation:* The 1-hour workshop was implemented during an academic medicine career development conference for medical students and residents. Participants and speakers were from the hosting medical school or nearby academic health centers. The venue chosen afforded students the opportunities for career-specific learning, skill development, a positive learning environment, and networking with individuals beyond their own academic health centers.
6. *Evaluation and feedback:* The workshop was evaluated through the use of a questionnaire administered to each of the participants.

Methods

The workshop featured three educational strategies: (1) an interactive didactic component to introduce students to leadership terms and theories, (2) a reflection exercise to help participants realize their current leadership activities and opportunities for growth, and (3) case scenarios to apply newly acquired knowledge to common leadership situations and challenges. Each session was restricted to 40 medical students and residents to create a safe space to discuss their perceived leadership strengths and weaknesses. This workshop can be implemented in the context of a multiworkshop curriculum, such as BNGAP's academic medicine conferences, or as a stand-alone workshop.

In preparation for the workshop, facilitators should review the PowerPoint (PPT) presentation (Appendix A), slide instructions (Appendix B), worksheet (Appendix C), case scenarios (Appendix D), and watch the train-the-trainer video (Appendix E). The preworkshop time commitment is approximately 1-2 hours for a review of materials. A practice session is highly recommended to enhance a successful workshop outcome. If multiple presenters are collaborating, we also recommend a phone conversation and brief face-to-face meeting before the session begins to discuss roles/sections that each will handle. It may work best if one person serves as the main moderator to transition roles.

Overall, the workshop takes approximately 60 minutes. We recommend the following time line:

- 3 minutes for introduction of facilitator(s) and objectives.
- 5 minutes for self-assessment exercise.
- 22 minutes for presentation of slides on leadership terms, theories, and opportunities.
- 15 minutes for small-group exercise.
- 15 minutes for personal journey, summary slides, and Q&A.

The following is an overview of the content of the included appendices.

Appendix A. Leadership PPT Presentation

The PPT contains the bulk of the educational content for this workshop. It consists of 33 slides describing leadership terms and theories, leadership opportunities, and activities to become a more effective leader. It also includes a reflection exercise and case scenarios for application of new theories learned.

Appendix B. Leadership Facilitator Guide

The discussion guide provides step-by-step instruction for each PPT slide and for the exercises featured in the PPT. Considering that role modeling is an important component of the presentation, facilitators should share their leadership journey or experiences during the presentation of slides 28-29.

Appendix C. Leadership Worksheet

This worksheet supports a reflection exercise in which participants are asked to list two examples of current leadership work for which they feel they need to develop stronger skills. Participants can be encouraged to share their responses with a colleague sitting next to them or with the larger group.

Appendix D. Case Scenario Handout

This document includes three case scenarios for the facilitator to introduce during slides 25-27, describing three common leadership challenges faced by trainees. These cases are analyzed during the 15-minute small-group-learning segment. Each small group should optimally consist of three to five participants. The three cases are randomly distributed amongst the groups. As an alternative, the group may choose its own real case or current project for this exercise.

Appendix E. Leadership Train the Trainer Video

This video is an adjunct to the discussion guide intended to help visual and audio learners gain an appreciation of how to implement the workshop. This 19-minute-long video features Dr. Eneida Roldan, coauthor of the workshop, explaining the intent of the slides, how to implement the cases, and how she

provided her own anecdotes and experiences. This video is designed to offer guidance to facilitators of the workshop and is best viewed prior to preparing for the workshop. As indicated in the facilitator guide (Appendix B), presenters are encouraged to relate their own experiences during the presentation, which can be adapted to best fit the anticipated audience (e.g., predominately medical students vs. residents vs. a mixed audience of both).

Appendix F. Leadership Evaluation Form

Each participant was asked to complete a survey with pre- and postworkshop questions before and after the workshop, using a 5-point Likert scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Agree*, 5 = *Strongly Agree*). Participants were asked to rate the following statements:

- A career in academic medicine would . . .
 - Allow me to serve in a leadership role at a medical school.
 - Allow me to serve in a leadership role in my community of interest.

After the workshop, participants were asked the following questions:

- Using a 5-point Likert scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Agree*, 5 = *Strongly Agree*), indicate “To what extent do you agree that the workshop learning objectives were met?”
 - Objective 1. Describe leadership terms and theories.
 - Objective 2. List leadership opportunities.
 - Objective 3. Describe ways to become a more effective leader.
- Open ended question: What did you like about this workshop?
- Open-ended question: What suggestions do you have to improve this workshop?

Materials

- Pens.
- AV equipment to show the PPT presentation.
- Chairs and tables to support three to five participants per table.
- Flip chart and markers to note the small-group comments regarding the cases.
- Printed copies of the leadership worksheet (Appendix C), case scenario handout (Appendix D), and evaluation form (Appendix F).

This workshop can be implemented among medical students or residents, or even fellows or junior faculty, with modification of the case scenarios to parallel the level of the participants. One or two individuals can facilitate the workshop. At least one facilitator should be of a rank higher than the participants so that participants can acknowledge that skills and solutions presented during the simulated cases represent realistic and credible possibilities given their current educational/work scenarios (i.e., the facilitator has walked in their shoes). Optimal timing for the workshop is 60 minutes; however, an extra 15-30 minutes can afford lengthier discussion of the case scenarios, more in-depth discussion of the facilitator’s own leadership journey, or deeper engagement with participants so that they can share their own leadership successes and challenges.

Results

At eight regional conferences, the workshop was facilitated by a total of 11 presenters (five single presenters and three pairs of cofacilitators) at various levels in their careers—resident (one), assistant professor (three), associate professor (three), and full professor (four). Additionally, multiple speakers held dean’s titles (one vice dean, four associate deans), and there was one departmental chair.

Eighty-five trainees participated in the workshop. The 85 respondents were a diverse sample—42 (49.4%) identified as women; 38 (44.7%) as men; 10 (11.8%) as lesbian, gay, bisexual, or queer; 26 (30.6%) as

Hispanic/Latino; 24 (28.2%) as white; 28 (32.9%) as African-American/black; 11 (12.9%) as Asian; and three (3.5%) as American Indian. There were 77 medical students and eight resident respondents who were training in 17 different states.

Eighty-two out of 85 learners (96.5%) responded to the pre- and postworkshop questions summarized in Table 1. In comparing responses before and after the workshop using paired-sample *t* tests, there was a statistically significant increase in participants' belief that a career in academic medicine would allow them to serve in a leadership role at a medical school (preworkshop *M* = 4.33 vs. postworkshop *M* = 4.57, *p* < .001) and in a leadership role in their community of interest (4.09 vs. 4.28, *p* < .05).

Table 1. Summary of Learner Responses to the Pre- and Postworkshop Questions (*n* = 82)

Question	Preworkshop <i>M</i> ^a	Postworkshop <i>M</i> ^a	<i>p</i> ^b
A career in academic medicine would . . .			
Allow me to serve in a leadership role at a medical school.	4.33	4.57	<.001
Allow me to serve in a leadership role in my community of interest.	4.09	4.28	<.05

^aFive-point Likert scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Agree*, 5 = *Strongly Agree*).

^bThe paired-sample *t* test was applied to assess a statistically significant change in confidence (*p* < .05).

Eighty-five out of 85 learners (100%) responded to the question, "To what extent do you agree that the workshop learning objectives were met?" Over 90% agreed or strongly agreed that each of the three learning objectives had been met. Their responses are summarized in Table 2.

Table 2. Learner Responses (*N* = 85) to the Question, "To What Extent Do You Agree That the Workshop Learning Objectives Were Met?"

Objective	No. (%)				
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Describe leadership terms and theories.	64 (75.3)	20 (23.5)	1 (1.2)	0 (0)	0 (0)
List leadership opportunities.	57 (67.1)	23 (27.1)	5 (5.9)	0 (0)	0 (0)
Describe ways to become a more effective leader.	59 (69.4)	20 (23.5)	4 (4.7)	2 (2.4)	0 (0)

Comments on the workshop were overall positive, with a few suggestions for improvement. Below we have organized some of the participants' comments by learning objective to the question, "What did you like about this workshop?"

- Objective 1. Describe leadership terms and theories.
 - "I liked that there were theories provided that would give me the tools to be a leader, especially a dynamic one that uses multiple styles."
 - "I appreciated the discussion about skill sets of leaders and leadership styles."
 - "Clear definition of different leadership themes and modalities."
- Objective 2. List leadership opportunities.
 - "I learned about the variety of different types of leadership and how I can fit into different roles. This differentiation taught me what kind of leader I am now and how I can grow into a different type of leader to incorporate the inclusion of others later on in my trajectory."
 - "The insight into what skills [of] a leader in academic medicine look like. I also enjoyed learning about the hierarchy of academic medicine and how to navigate this. I liked learning about the different styles of leadership."
 - "I liked the workshop, it presented good ways to be a leader and qualities needed to be a leader. Also, the presentation emphasized how important leadership is in organization."
 - "I learned how to seek out leadership opportunities in academics and clinic work."
- Objective 3. Describe ways to become a more effective leader.
 - "It was helpful to hear about different leadership styles and ways to improve and seek out leadership opportunities."
 - "They provided information on leadership that I was unaware of prior to this session. I found it to be very informative."
 - "Clear demonstration of types of leaders + strengths/weaknesses."

- “I really liked this workshop! I have experienced challenges in leadership throughout med school and from this workshop I could identify what type of leader I am and how I can improve!”
- “I enjoyed how I was immediately able to apply topics discussed that could be applied to my leadership style.”
- “Well-informed presentations & I liked how the information was also presented in a sincere, meaningful, caring way.”
- “This was wonderful; leadership workshop was really informative, and well organized.”

For the question, “What suggestions do you have to improve this workshop?” the following improvements were offered:

- “Wish there was more on how to overcome conflict/differing ideas on being a leader and how to be an effective leader in times of difficulty.”
- “No suggestions for improvement, I just wish we had more time to work with this lecturer to personalize the information presented.”
- “I would have enjoyed hearing more about speaker’s journey/challenges/successes in becoming and acting as a leader.”
- “Could provide concrete examples—for example speaker’s own path.”
- “To improve I would incorporate role play prompts of real life leader-follower relationships.”
- “Buzz terms/phrases for effective leaders would be helpful. Also, including a list of national opportunities for medical students.”
- “I think more information on how to develop yourself as a leader and what characteristics make someone a good leader.”

Discussion

Our workshop was designed to introduce medical students and residents to leadership concepts, opportunities, and experiences, and was successful in engaging participants. The topics were chosen to encourage participants to continue to pursue further training in leadership and seek out leadership opportunities. Participants gained specific knowledge regarding leadership styles and the scope of leadership roles available to physicians. They also recognized their lack of knowledge regarding physician leadership roles and opportunities, and expressed their interest in pursuing leadership opportunities in their current educational programs.

This workshop was designed to be concise, interactive, and engaging. Although information on leadership styles and theories was somewhat instructive in nature, specific examples of the scope of physician leadership roles (as well as specific examples of leadership) provided trainees with an opportunity to apply this information to their current level of study and identify potential areas of investigation. For many participants, an “aha” moment developed when they recognized that the leadership roles they had undertaken in the past (e.g., as a scout leader, student mentor, or student council member) could be adapted and developed to leadership roles in their future careers. This “aha” moment also helped students realize that leadership roles in medicine were not that difficult to achieve.

Evaluations identified several limitations of the workshop. Many participants commented that more real-life examples would have been beneficial in helping them understand how best to move upward in leadership careers. Case studies and personal experience have been shown to improve student uptake of academic career studies^{19,20} and leadership roles in particular.²¹ The instructions for PPT slides 28-29 have been changed to encourage facilitators to share their own leadership development, discuss which activities and/or training they engaged in during graduate school that prepared them for their current academic positions, and describe a success or challenge in becoming and acting as a leader. Additionally, to further strengthen these components, it might be helpful to provide participants with prereadings, especially regarding some of the leadership theories described by Skog and Goleman,^{22,23} to help prime them for the topic matter and guide their reflections prior to the workshop. It should be noted that although the

workshop was designed for an audience with as many as 40-50 individuals, it is best to keep sessions smaller to promote an interactive and reflective environment.

One participant felt providing examples of how to handle conflict when acting in a leadership role based on situations participants had experienced, such as serving as a chief resident, would be beneficial. Conflict management is a critical topic but extends beyond the learning objectives and time constraints of this presentation. We have added a PPT slide (30) that lists resources for medical students and residents to further develop knowledge of leadership theory and practice. Additionally, a listing of the key elements of a clinical physician leader²⁴ is provided in the facilitator guide; this serves as a glossary of terms and buzzwords to aid participants in identifying specific skill-building resources.

This workshop is considered introductory in nature and has not been designed to provide comprehensive training in physician leadership. The workshop is successful in introducing leadership concepts, theories, and basic skills that participants can begin to develop during their training years. Finally, it identifies opportunities both during training and in clinical practice that participants can engage in to practice leadership skills.

Joel Dickerman, MD: Associate Dean of Clinical Affairs, Rocky Vista University College of Osteopathic Medicine

John P. Sánchez, MD: Assistant Dean, Diversity and Inclusion, Rutgers New Jersey Medical School; Associate Professor, Emergency Medicine, Rutgers New Jersey Medical School

Maria Portela-Martinez, MD: Chief of the Medical Training and Geriatrics Branch, Bureau of Health Workforce, Health Resources Services Administration

Eneida Roldan, MD: Chief Executive Officer, Pathology, FIU Healthcare Network; Associate Dean, International Affairs, Florida International University Herbert Wertheim College of Medicine; Associate Professor, Pathology, Florida International University Herbert Wertheim College of Medicine

Disclosures

None to report.

Funding/Support

None to report.

Ethical Approval

This publication contains data obtained from human subjects and received ethical approval.

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Received: July 26, 2017 | **Accepted:** January 24, 2018 | **Published:** February 6, 2018