The state of leadership education in US medical schools: results of a national survey

Sabrina M. Neeley a,*, Brian Clyne b and Daniel Resnick-Ault c

aPopulation & Public Health Sciences, Boonshoft School of Medicine, Wright State University, Dayton, OH, USA; bEmergency Medicine, Alpert Medical School of Brown University, Providence, RI, USA; cDepartment of Emergency Medicine, Boston Medical Center, Boston, MA, USA

ABSTRACT
Over the past two decades, there have been increasing calls for physicians to develop the capabilities to lead health care transformation. Many experts and authors have suggested that leadership education should begin during medical school; however, little information exists regarding the presence or nature of undergraduate medical education leadership curricula in the USA. This study sought to determine the prevalence of formal leadership education in US undergraduate medical schools, as well as the delivery methods and degree of student participation. A web-based survey of medical education deans from US allopathic medical schools (N = 144) was administered from November 2014 to February 2015. The survey included questions on the presence of leadership curricula, delivery format, student participation rates, and forms of recognition. Eighty-eight surveys were completed; the majority (85%) of respondents were associate or assistant deans for medical education. Approximately half (54.5%) of respondents reported leadership curricula within their medical schools. Of those, 34.8% (16/46) were required; 32.6% (15/46) were elective; and 32.6% (15/46) were both required and elective components. Of schools with formal leadership curricula (n = 48), the common forms of content delivery were: mentoring programs (65.1%); dual degree programs (54.5%); workshops (48.8%); seminar/lecture series (41.9%); courses (41.9%); or single seminars (18.6%). Nineteen percent of institutions offer longitudinal leadership education throughout medical school. Common forms of recognition for leadership education were: course credit (48.8%); dual degrees (37.2%); certificates of completion (18.6%); and transcript notations (7.0%). This study indicates that formal leadership education exists in more than half of US allopathic medical schools, suggesting it is an educational priority. Program format, student participation, delivery methods, and recognition varied considerably. Further study is needed to identify the optimal content, competencies, and pedagogy for leadership education. Identifying best practices may help guide standards for leadership curricula across UME and fill this educational need.

Background
To address the challenges of our modern health care system, experts and organizations have pointed out the critical need for effective leadership. Increasingly, physicians are being called upon to demonstrate leadership competencies that extend beyond the scope of traditional medical training.[1–5] The demand for physician-leaders has been met with a proliferation of leadership programs from various sponsors including academic medical centers, major universities, and specialty societies.[6,7]

In undergraduate medical education, the requirement to develop students with leadership competencies has become explicit. The Association of American Medical Colleges’ publication describing the ‘core entrustable professional activities’ for entering residency includes the expectation that graduating students will have the ability to ‘provide leadership skills that enhance team functioning, the learning environment, and/or the health care delivery system.’[8] Accordingly, research suggests that leadership education should begin during medical school to develop future physician-leaders.[9–11] A systematic review of 26 studies found that medical students believe that learning leadership and management skills is important.[11] Results of a qualitative study of faculty and students revealed similar attitudes toward leadership education and placed particularly high importance on communication skills, ethics, conflict resolution, and time management. [10] Over 90% of medical students responding to a survey believed that training in medical leadership and management was very important for their future roles as physicians, and more than 70% wanted more training in the curriculum.[12] Some US medical schools have responded to this imperative, offering

CONTACT Sabrina M. Neeley sabrina.neeley@wright.edu Population & Public Health Sciences, Boonshoft School of Medicine, 2901 White Hall, 3640 Colonel Glenn Highway, Dayton, OH 45435, USA
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specialized MD/MBA combined programs [13,14] or leadership training with special focus in areas like primary care, population health, or advocacy.[15,16] But despite the movement to provide leadership training in UME, many schools lack formal curricula. Fewer still offer leadership training to all medical students, not just those willing to bear the cost of an additional degree.[14]

That many schools lack formal curricula may be due to limited guidance regarding the ideal curricular content, format, delivery methods, duration, or timing of leadership education in medical school. Varkey et al. [10] found that while students felt confident in their communication skills, ethics, and time management, they felt they had minimal competence in management principles, quality improvement, risk management, and negotiation. Another study found that medical students rated communication, negotiation, conflict resolution, and decision-making to be most the valuable topics in a leadership education program.[17] In the UK, the National Health Service (NHS) developed the Medical Leadership Competency Framework (MLCF) in 2010, followed by the Healthcare Leadership Model in 2013, to guide the development of curriculum in leadership and management education.[11,12,14]

In terms of structure, one systematic review found that most leadership curricula were offered longitudinally, were classroom-based, and included both pre-clinical and clinical students.[14] Other studies suggest that integrating leadership training into other student experiences – clinical rotations, simulations, case studies, or other experiential education – is optimal. [10,11,17] This is consistent with literature on physician-level programs that emphasize the importance of active learning and skill application.[6,7]

The main objective of this study was to determine the prevalence of formal leadership education in US undergraduate medical schools, as reported by medical education deans. Research on leadership curricula to date has generally been limited to reports of a single institution’s curriculum development and implementation or systematic reviews, which focus only on published curricula. A survey of all US medical education deans allows us to capture institutions that may have developed and implemented innovative curricula, but not sought publication. Secondary objectives of this study were to examine the extent of student participation and delivery methods for UME leadership curricula.

Methods

The study protocol was reviewed and exempted by the Institutional Review Boards of the co-authors’ institutions. Our study population was all medical education deans or their representatives from US allopathic medical schools. A list of all US Association of American Medical Colleges (AAMC) member schools, as of 7 October 2014, was generated. This list represented all (100%) US MD-granting schools with Liaison Committee on Medical Education (LCME) accreditation (N = 144). A list of email addresses for medical education deans was compiled by searching the medical school websites.

A cross-sectional online survey was administered through the Qualtrics® (Qualtrics, LLC. Provo, UT, USA) web-based software package from 17 November 2014 through 27 February 2015, with one interval reminder on 15 February 2015. Participants were asked to participate via email and were provided with a link to the online survey platform. Participants completed the online survey at their convenience and in a setting they determined.

The 10-item survey included questions on the following topics:[1] whether the school offered leadership education within the formal UME curriculum,[2] whether leadership education is required or elective,[3] the percentage of students participating in the training,[4] the delivery format,[5] at what point during medical school students participate,[6] student recognition for participation,[7] non-curricular leadership opportunities, two demographic questions, and an open-ended question asking participants to describe aspects of leadership training at their institution.

Results

Eighty-eight surveys were deemed complete and analyzed, for a response rate of 71.5% (88/123). Of those contacted, 21 were excluded due to email addresses that were rejected or unconfirmed, and 26 (21.1%) were non-respondents. There did appear to be a lower response rate from schools in the Western USA, but 17 respondents declined to identify their schools. The majority (85%) of participants held the position of associate or assistant dean for medical education at their institution.

Approximately half (54.5%; 48/88) of survey participants indicated the presence of a formal leadership curriculum within their medical school. Of those schools with a formal curriculum, 34.8% (16/46) reported the curriculum was required for all students, 32.6% (15/46) stated it was elective for students, and 32.6% (15/46) indicated both required and elective components of the curriculum.

Forty-three of the schools with formal leadership curricula provided information about the delivery format. Content is delivered through mentoring programs in 65.1% (28/43) of schools, through dual degree programs in 58.1% (25/43), workshops in 48.8% (21/43), seminar or lecture series in 41.9% (18/43), through courses in 41.9% (8/43), single seminars in 18.6% (8/43) and through other activities in 32.6% (14/43) of institutions. In total 132 responses were offered by the 43 schools, since many institutions offer multiple delivery formats.
Forty-three of the schools also provided information about when students participate in leadership training. Almost 49% (21/43) of the institutions offer leadership education longitudinally across all four years of medical school. Even those schools not providing a longitudinal curriculum offer training at multiple times along the students’ educational experience. At 55.8% (24/43) of schools, students receive some type of leadership education during their MS-1 year. The MS-4 year is also a critical time for leadership training at 46.5% (20/43) of schools, followed by MS-2 (39.5%; 17/43), MS-3 (37.2%; 16/43) and extended time beyond four years (27.9%; 12/43).

Participants reported that the most common forms of recognition for leadership education and training are: course credit (48.8%; 21/43); dual degrees (37.2%; 16/43); certificates of completion (18.6%; 8/43); transcript notations (7.0%; 3/43); other types of recognition (14.0%; 6/43); or no recognition (32.6%; 14/43). Many institutions recognize training completion in more than one way.

Of those 31 institutions with elective leadership training, 15 reported participation by 20% or fewer students. Nine of the 31 schools with elective training reported participation by 21–40% of students, and 7/31 schools indicated that 41% or more of their students participated in elective leadership education.

Institutional representatives reported numerous other opportunities for students to develop leadership experience, even when a formal curriculum was not offered. Non-curricular training opportunities offered include: student government (90.4%; 75/83); committee work (90.4%; 75/83); interest groups (89.2%; 74/83); community service projects (88.0%; 73/83); volunteer experiences (86.7%; 72/83); tutoring or teaching assistant opportunities (83.1%; 69/83); or other opportunities (24.1%; 20/83). Some unique aspects of leadership training described include leadership tracks, integration into clerkships, formative coaching, and learning communities.

An open-ended question asked survey participants to describe unique aspects of their leadership training. Twenty-seven participants provided additional information. Leadership training at these institutions most often took the form of guidance and mentoring (4/27), student organizations (4/27), student run clinics (3/27), institutional committees (2/27), learning societies/learning communities (2/27), and community involvement/internships/capstone experiences (2/27). Other schools offer leadership training through teamwork training for small groups, formative coaching, self-directed opportunities, leadership lunches with school administration, and a student retreat.

Two institutional representatives said they offered some type of leadership track with specified competencies, curriculum, experiential learning or research opportunities, mentoring, and formal recognition. One school offers leadership training as part of a longitudinal interprofessional course, one as part of a Science of Healthcare Systems course, and one institution through their Leadership in Caring for Underserved Populations (TRIUMPH) program.

Discussion

Fueled by rapid changes in US health care, physician leadership development has received increasing attention. National organizations have called for increased physician leadership capabilities.[18–20] In response, leadership programs have proliferated, targeting experienced physicians with executive potential, junior clinicians, and even residents in training.[21]

The state of UME leadership education – the prevalence and nature of leadership curricula across all US medical schools – is not well described. In an effort to determine the presence and characteristics of UME leadership training, this study found that formal leadership education exists in more than half of US allopathic medical schools. This finding suggests that leadership is an educational priority; however, only one-third of schools require students to participate in the leadership curriculum. At schools with only elective leadership training programs, student participation rates were low. This finding may reflect lack of student interest, lack of incentives to pursue leadership training, or competing educational demands. These findings are similar to the results of a survey of curriculum deans and directors at UK medical schools regarding the integration of MLCF guidelines and suggested curriculum changes – high awareness of need, but only about half of schools offering curricula.[12]

Leadership program format, timing of student participation, delivery methods, and recognition for completion varied considerably. Open-ended comments from survey participants supported this wide variance in the types of activities considered leadership training, with everything from student representation on committees and extra-curricular participation in student organizations to mentoring, student run clinics and community-based internships to formalized coursework and tracks. This lack of standardization may reflect the heterogeneity of leadership resources and personnel across institutions. One school representative said their institution offered a seminar and workshop for three years, until the Business School discontinued participation. It may also reflect the challenge of introducing new educational content into an already crowded curriculum, supporting the findings of other researchers who have examined leadership curriculum implementation.[11] Several representatives stated that their institution was currently in the process of developing leadership training.
The variation in leadership education may also relate to the institutional mission. That some schools have made a significant investment in leadership through dual degree programs and leadership tracks, while others have few offerings, may correlate with the school’s founding principles. In a separate study, we examine the relationship between a leadership-themed medical school mission statement and the presence of a leadership curriculum.

Further study is needed to identify the appropriate content, competencies, pedagogy, and outcome measures for student leadership programs. While models exist for leadership education in other industries, best practices in medical student leadership education are not well described. Webb et al.’s systematic review of published studies about leadership curricula evaluated these curricula against the NHS’s MLCF framework from the UK, concluding that “it is the most comprehensive and detailed model for leadership education in medicine that we found in the literature” (p. 1565). Indeed, the MLCF and the Healthcare Leadership Model, developed by the NHS Leadership Academy, show promise as potential guides to identifying core competencies. The model identifies nine dimensions of behavior deemed important to effective leadership in health care. It is designed as a guide for anyone in any role, and at any level of responsibility to develop as an effective leader to improve the patient experience, the quality of care, and the organizational reputation.

Identifying other best practices and establishing a common, evidence-based, required leadership curriculum endorsed by UME experts and adapted across institutions would fill an identified educational need.

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ORCID
Sabrina M. Neeley http://orcid.org/0000-0002-2694-4099

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