Preparing Future Healthcare Leaders through Graduate Education:

The Impact of Program Accreditation on Quality Improvement

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Executive Summary

Changes in the demands and complexity of healthcare leadership roles are heightening attention to the formal educational preparation of future leaders. The healthcare management profession has developed a rigorous educational pathway for entry-level professionals through the continuous quality improvement processes associated with program accreditation; however the impact of program accreditation has not historically been the subject of systematic study, meaning the case for program accreditation has been more philosophical than empirical. We hypothesized that a healthcare management program's accreditation tenure would be associated with factors related to applicant quality, program selectivity, and starting salaries of students upon graduation. The sample included all graduate programs that were accredited in the 2013-2014 academic year and had completed a full annual report to the Commission on Accreditation of Healthcare Management Education (CAHME). As hypothesized, we found factors within each of our three areas of interest to be associated with accreditation tenure, providing at least preliminary evidence of an association between program-level accreditation and continuous quality improvement in programmatic outcomes.

Introduction

As the U.S. health system continues its evolution toward higher-value care models, the roles of healthcare leaders in these changes are becoming increasingly critical and complex. Recent issues of the *Journal of Healthcare Management* highlight numerous leadership competencies that are becoming more critical to success in areas such as enabling data-driven decision-making (Weiner, Balijepally,& Tanniru,2015), management system standardization (Toussaint, 2015), process innovation (McLaughlin & Militello, 2015), and facilitation of large-scale change (Kash, Spaulding, Johnson, & Gamm, 2014). As healthcare leadership roles

continue to evolve, graduate programs seeking to prepare future leaders for success will need to keep pace with these changes in order to ensure their students are well-prepared for the roles they take upon graduation. Recent writings about higher education suggest this preparation may be easier said than done, as the business models underlying education do not necessarily incentivize responsiveness to the employer community (Cai, 2013). One important safeguard to ensuring graduates are well-prepared is through program accreditation, and its associated expectations around continuous quality improvement in response to the needs of all stakeholders: students, professionals, and society (King, 2013).

Historically, accreditation processes have not lent themselves well to inter-university outcomes assessment; however recent advances in data collection and standardization are opening the doors for more sophisticated and coordinated approaches to this type of research. The present study represents a preliminary effort to begin a program of research in this area. For context, we first consider the role of formal preparation of healthcare leaders as it is currently recognized.

Graduate education for future healthcare leaders

Although a master's degree has long been described the "standard credential" for many healthcare management positions, a plurality of degree options may be considered adequate preparation, including "…health services administration, long-term care administration, health sciences, public health, public administration, or business administration" (U.S. Bureau of Labor Statistics, 2008, 1).

Recognizing the challenges this lack of standardization created for prospective students, the American College of Healthcare Executives (ACHE) issued a new policy statement in 2013 (revised in 2014) to clarify its positions concerning the appropriate preparation for healthcare

executive management roles. In its statement, ACHE underscores the following as its first two considerations: first, that a graduate degree should be the "minimum requirement for entry into executive healthcare management," and second, that "accredited programs, such as those accredited by CAHME, are considered optimal" (American College of Healthcare Executives, 2014). The rationale for preferring program accreditation is further explained as ensuring a program's commitment to ensuring quality standards.

Specialty/program accreditation

The peer-review-based approach to program accreditation has a long history of use in supporting continuous quality improvement, and its widespread adoption in the United States and Canada is widely considered a cornerstone of these countries' global reputation for excellence in higher education (King, 2013). In these countries, the most widely recognized peer-review-based accreditor is the Commission on the Accreditation of Healthcare Management Education (CAHME), which currently accredits 89 85 graduate programs (CAHME, 2015). Programs meeting CAHME criteria are eligible for accreditation regardless of the type of college housing them, and CAHME-accredited programs are currently found in diverse colleges and schools including allied health, business, medicine, public administration, public health, and colleges of medicine.

Accreditation and program outcomes

Although the dominant model for educational accreditation is quality assurance – i.e. adherence to a set of established standards (Temponi, 2015), CAHME accreditation also emphasizes continuous quality improvement, in which programs demonstrate continued progress toward a set of goals that tie uniquely to a given program's mission. In theory, a continuous improvement approach should, over time, be associated with ever-better program outcomes.

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However, accreditation processes have generally lagged behind the field of practice in subjecting their outcomes to systematic study, at least in part because accreditors have been slow to adopt electronic systems for program monitoring.

In recent years, however, CAHME has transitioned to an electronically-based data collection protocol for its accredited programs. In keeping with their commitment to transparency, CAHME has also developed mechanisms through which these data can be used to assess national trends in the profession as well as the impact of the accreditation process itself.

In the present study, we sought to provide a demonstration of the ways in which accreditation may impact programmatic outcomes in important ways, by assessing accreditation tenure against other data elements of interest to graduate program stakeholders. First, we hypothesized that accreditation tenure was related to a program's selectivity, including total number of applicants, conversion rates, incoming student GRE scores, and incoming student grade point averages (GPAs). Second, we examined whether or not the tenure of CAHME accreditation was related to specific student outcomes, including job placement rates and starting salaries.

Methods

The sample for this study included all health administration programs accredited by CAHME during the 2013-2014 academic year and who had submitted annual report information to CAHME for this period. A total of 72 accredited programs were included in this analysis, representing approximately 87% of the 83 total programs accredited at that time.

To maximize statistical power, we conducted our analyses on a case-wise basis for each variable tested. In other words, for our analysis of the relationship between accreditation tenure and incoming student Graduate Record Examination (GRE) scores, we only included programs

with valid reported scores for GRE exams. Programs omitting their incoming GRE scores, or reporting invalid scores, were eliminated from the analysis. An additional consideration was the iteration of GRE score reported. Educational Testing Service (ETS), the organization that administers the GRE, revised its scoring methodology of the GRE exam in August 2011, however some programs were continuing to report their incoming GRE scores using the outdated scale. In these cases, we converted scores for those programs to reflect the current scale through the use of the GRE concordance table (ETS, 2015). The design of this study was correlational and cross-sectional, using data from the 2013-14 academic year, allowing us to capture data from one admissions cycle for selectivity metrics, and one graduating cohort for outcomes metrics. To maintain organization confidentiality, institutions were de-identified.

Variables

The independent variable in this study was tenure of continuous accreditation, measured in total years up to the date of the study period, as provided by CAHME staff. Program outcomes were the dependent variables, as grouped into three different categories: applicant quality, program selectivity, and post-graduate positions. Applicant quality included variables characterizing the academic credentials of each program's incoming class, including the median, lower quartile, and upper quartile for GRE quantitative and GRE verbal scores, as well as the median, lower, and upper quartile grade point averages (GPAs). The outcomes category included median starting salaries for post-graduate fellowship and non-fellowship positions.

All program outcomes data wasere provided by CAHME through its Jaspersoft software program, which was accessed as part of a data use agreement specific to this research investigation. All statistical tests were performed using SPSS for Windows version 17 statistical software (SPSS, Chicago, IL).

We ran descriptive statistics to determine the overall composition of accredited programs in the data set, including program size, geographic location, and degree type. We then performed a series of correlations to analyze the association between accreditation tenure and the program outcomes variables. All correlations were evaluated for significance at the $p = 0.05$ level.

Results

Descriptive statistics are summarized in Table 1. The average tenure of accreditation for all accredited programs was 26.1 years (SD=16.3). The data was skewed, as a large number of programs (N=14) have demonstrated continuous accreditation for 47 years, since the inception of CAHME. Programs also varied in size, with the average incoming class size reported as 31 students (SD=22). The smallest program only enrolled 10 students in the fall semester, while the largest program enrolled 135 students. On average, programs received 116 total applications (SD=77.1) and 101 completed applications (SD=76.6). Total applications consist of all prospective students who begin an application, while completed applications encompass prospective students who submit all required application materials to a respective institution to be considered for admission. Acceptance rates ranged from .20 to 1.0, but the average acceptance rate of all applications was 0.52 (SD=0.18), and the average acceptance rate for completed applications was 0.61 (SD=0.19). Acceptance rates were calculated as the number of admissions offered divided by total applications and completed applications, respectively. As expected, starting salaries were higher for graduates moving into operational jobs than fellowships, with the former earning an average of over $62,000 annually (SD=$16,996) compared to $52,000 (SD=$7,270) for fellowship positions.

Table 1: Descriptive statistics

Variables	N	Mean	s.d.
Tenure of Accreditation (years)	73	26.1	16.3
Program Size (number of students)	73	31	22

Applicant Quality

Median GRE Quant	49	151.8	2.9
1st Quartile GRE Quant	49	148.2	3.9
3rd Quartile GRE Quant	49	155.6	3.1
Median GRE Verbal	49	153.0	3.4
1st Quartile GRE Verbal	49	148.9	3.9
3rd Quartile GRE Verbal	49	157.1	3.4
Median Incoming GPA	49	3.4	0.2
1st Quartile Incoming GPA	49	3.1	0.2
3rd Quartile Incoming GPA	49	3.6	0.1

Program Selectivity

Total Applications Received	72	115.5	77.1
Completed Applications Received	72	100.9	76.6
Acceptance Rate - Total Applications	72	0.52	0.18
Acceptance Rate - Completed Applications	72	0.61	0.19

Outcomes

Median Starting Salary - Fellowships	31	$52,300	$7,270
Median Starting Salary - Jobs	47	$62,501	$16,996

Based on the non-normal distribution of accreditation tenure, Spearman's rho correlations were performed for all tests of association with results summarized in Table 2. Our first tests examined the association between accreditation tenure and the standardized test score results of incoming students. While all associations were in the expected directions, only two of the six relationships – median GRE quantitative, and first quartile GRE quantitative – reached statistical significance. Our second set of analyses examined accreditation tenure and the GPAs of incoming students. From these analyses we found a significant association with first quartile GPA. The relationship with median GPA, while in the expected direction, did not reach statistical significance, and there was no association with third quartile GPA. Across both GPA and GRE analyses, the third quartile associations were the weakest, suggesting the effect of accreditation tenure may be stronger on the quality of the lower bounds of students than on the upper bounds.

Our next set of analyses examined program selectivity. Here we found significant associations between accreditation tenure and both total applications and completed applications, in line with the study hypothesis. The relationships between accreditation tenure and acceptance rates were in the expected direction, but failed to reach statistical significance.

The final set of analyses attempted to assess the relationship between a program's accreditation tenure with the earning potential of its respective graduates. While each of these correlations reached statistical significance, the relationship with non-fellowship jobs was the only variable with which accreditation tenure achieved a high level of statistical significance. These strong relationships suggest that length of accreditation might play a stronger role on the earning potential of graduates than on applicant quality or program selectivity.

Table 2: Relationships between accreditation tenure and program outcomes

Variables	Correlations
Applicant Quality	
Median GRE Quant	.34*
1st Quartile GRE Quant	.36*
3rd Quartile GRE Quant	.18
Median GRE Verbal	.24
1st Quartile GRE Verbal	.20
3rd Quartile GRE Verbal	.17
Median Incoming GPA	.22
1st Quartile Incoming GPA	.31*
3rd Quartile Incoming GPA	-.01
Program Selectivity	
Total Applications Received	.25*
Completed Applications Received	.29*
Acceptance Rate - Total Applications	-.15
Acceptance Rate - Completed Applications	-.23
Starting salaries	
Median Starting Salary - Fellowships	.39*
Median Starting Salary - Jobs	.38**

*Spearman's rho significant at the α<.05 level (2-tailed)
**Spearman's rho significant at the α<.01 level (2-tailed)

Discussion

Before discussing implications of our findings, some limitations of this study are worth noting. One of the most important of these limitations is the size of the population of programs under study. Although previous estimates have suggested there are over 250 graduate healthcare management programs in the United States (Garman et al., 2010), only 859 have CAHME accreditation, and only 72 provided sufficient data during the study period to allow for analysis. Given this small scale, only moderate to large effect sizes could be picked up. Second, at the time of this study the electronic collection of program data was a relatively new process, one that relied entirely on self-report and did not have validity checks. While we have no specific reason to believe any data-related errors would be systematic, the unsystematic impact such errors might have had on the results is unknown.

These limitations notwithstanding, the results suggest, beyond accreditation itself, that tenure of accreditation may be associated with outcomes of importance to stakeholder groups. Further, since this information is publicly available on CAHME's website, accreditation tenure may be a useful additional data element to consider when assessing a program's quality. For program leaders, accreditation seems to be associated with larger applicant pools over time. With larger applicant pools, programs have greater opportunity for selectivity in who they extend offers to, which in turn can help ensure students coming into these programs are adequately equipped for success both in the academic program and after they graduate. For employers, tenure may provide some insight into the selectivity of the program, and thus the capabilities of

its graduates. For students, tenure may provide insight into the quality of position offers they are likely to receive post-graduation, as well as their possible earning potential upon graduation.

Conclusions

Clear and rigorous educational pathways are a cornerstone of mature professions. Accreditation has an important role to play in another cornerstone: assuring competence of entrants into the health management profession through peer review and continuous improvement. As attention to outcomes continues to grow, it will be important to move beyond accreditation as the end point, and toward accreditation as an enabler of more favorable outcomes for all stakeholders: students, faculty, employers, and the populations employers ultimately serve. Through our research we sought to provide an initial contribution to this line of scholarly inquiry, one we hope will be continued by many others in the years to come.

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