

The Convergence of Business and Medicine: A Study of MD/MBA Programs in the United States

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The purpose of this paper is to identify the convergence of business and medical education and describe the curricula of MD/MBA (Medical Doctor/Master of Business Administration) programs in the US. The focus of this study is to provide a guide to dual MD/MBA programs for physicians, aspiring physicians, policy makers and healthcare organizations. We studied the curricula of 52 universities offering a joint MD/MBA program. The study measured program structure, duration of the dual degree, geographic spread of universities and the average tuition. No recent study has looked into the essential characteristics of these programs. The top disciplines among the 46 programs include strategy, leadership and financial management. Program duration was between five and six years, with an average of 46 semester hours per degree. The average cost of the MD/MBA degree in addition to medical school was \$35,810. Geographically, the majority of MD/MBA programs are located in the Northeastern US (33.9%), followed by the South (28.6%), the Midwest (23.21%) and the West (12.5%).

Keywords: MD/MBA (Medical Doctor/Master of Business Administration), business education, medical education, curricula

Introduction

For the last 15 or more years, there has been a market for training physicians who, in some capacity, practice management in addition to their clinical work. Much of that early training was designed and implemented by such organizations as the American College of Physician Executives, whose members were primarily physicians. As the need grew, medical and business schools took up the challenge to provide physicians with the credentials they desired. Currently, business schools and medical schools are undergoing shifts in their pedagogical paradigms (Bennis & O'Toole, 2005; Buchholz & Rosenthal, 2008). Ashford (2008) commented, "As professional schools, colleges of business are expected both to produce knowledge and to prepare people for practice" (p. 68). This holds true for medical education as well. In business education, Mintzberg's (2004) controversial book *Managers Not MBAs* calls for significant changes in the education of professional managers. He stated that MBA programs are often out of touch and unrealistic when they lacked appropriate grounding in the craft and art of management. This sentiment has been reported by others (Rubin & Dierdorff, 2007).

Changes in the purpose, curricula and pedagogy of business and medical schools have given students

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greater choice in specialization. Gupta, Saunders, and Smith (2007) concluded in their investigation of 758 employment advertisements and 27 MBA (Master of Business Administration) programs that there was value in offering both general MBA and specialized MBA programs, and this value was experienced by potential employers, students and faculty. Today, there are even such specialized programs as the MMM (Master of Medical Management) degree, with admission exclusively to physicians, taught at Tulane University, Carnegie Mellon and the University of Southern California. These programs equip physicians with knowledge, skills and conceptual roadmaps for delivering financial management, quality management, human resources management and strategic management, and provide a “practice field” for physician-managers.

Commonalities in Medical and Business Education

Given these challenges and opportunities, joint MD/MBA (Medical Doctor/Master of Business Administration) programs play a prominent role in the management education of physicians. The convergence of business and medical education has shown clear commonalities: Skills in problem-solving and decision-making are emphasized in business schools by using the case method (Hawes, 2005), and problem-based learning is taught in medical schools (Massa, 2008). Studies of physicians with MBA degrees find that business education represents an effective complement to medical training. In a recent study, 81% of physicians with MBA degrees believed their business degree was useful in the advancement of their careers (Parekh & Singh, 2007).

The MD/MBA degree has been the focus of several investigations (Shalowitz, Nutter, & Snarr, 1996; Sherrill, 2000) assessing the differences between dual degree and traditional medical student education. The MBA for physicians has also been examined (KURO, 1997; Wenger, 2006). The growth in MD/MBA programs has been documented (Larson, Chandler, & Forman, 2003), noting an increase from six programs in 1993 to 33 programs in 2001 (450% growth). More recently, an increase was noted from 33 programs in 2001 to 46 (39% growth) in 2005 (Crites, Ebert, & Schuster, 2008). As of 2008, there were 49 allopathic medical schools offering a combined MD-MBA program (American Association of Medical Colleges, 2008). Although many authors have chosen to explain the importance of management education for physicians, none have thrown light on the existing curricula offered at the universities with respect to courses taught, duration of the dual degree, geographical spread of the universities and the average tuition for such programs. This paper acts as a guide to dual MD/MBA programs for physicians and aspiring physicians, policy makers and healthcare organizations.

Methodology

A Web-based search of joint MD/MBA programs in the US was performed. Our sample consisted of curricula from 52 universities, offering a joint MD/MBA program between a medical school and a business school. Data were compiled with respect to number of courses taught, skills acquired during the program, duration of the course, the average tuition costs and the geographical spread of these 52 universities. Two related databases were found—the AAMC (American Association of Medical Colleges) and the National Association of MD/MBA students.

Results

Several trends were observed in the joint MD/MBA programs offered by the 52 universities.

A majority of universities focus on three areas of physician development: strategic management, financial

management and leadership skills. The top five disciplines offered were strategy and management (91.1%), marketing management (87.5%), operations management (87.5%), financial management (85.7%) and leadership (85.7%). Figure 1 illustrates the frequency of disciplines within the 52 MD/MBA programs.

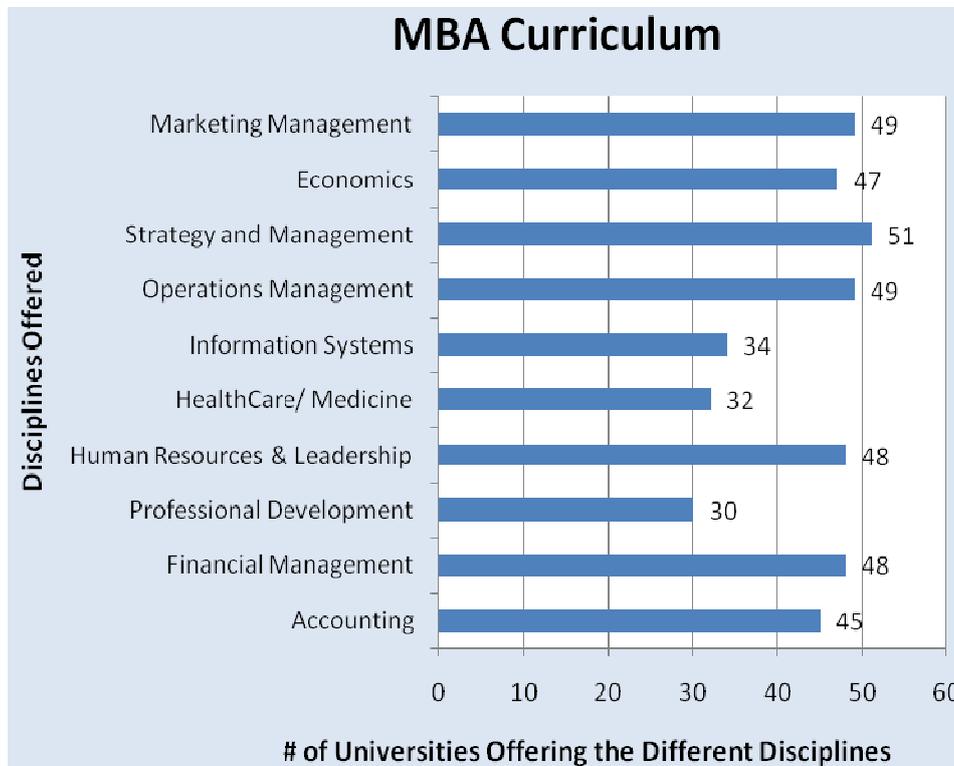


Figure 1. Count of universities offering different disciplines.

The disciplines least offered were management courses tailored specifically for professional development (53.6%), healthcare/medicine (57.1%) and information systems (60.7%). Of the 52 universities, only 32 offered courses in healthcare, of which 11 offered healthcare courses as electives. Table 1 shows the courses offered in different disciplines in each of the programs.

Table 1

The Courses Offered in Different Disciplines in Each of the Programs

Name of school	Courses offered in different disciplines									
	Accounting	Finance	Professional development	Human resources & leadership development	Healthcare/ medicine	Information systems	Operations management	Strategy and management	Economics	Marketing management
Baylor College of Medicine & Jones School of Management at Rice University	✓	✓	✓	✓	✓		✓	✓	✓	✓
University of Buffalo School of Medicine & UB School of Management	✓	✓	✓	✓	✓		✓	✓	✓	✓

(to be continued)

Columbia University College of Physicians and Surgeons & Columbia Business School	✓	✓		✓			✓	✓	✓	✓
Weill Cornell Medical School & Johnson School of Management at Cornell	✓	✓	✓	✓			✓	✓	✓	✓
Dartmouth Medical School & Tuck School of Business		✓	✓	✓	✓	✓	✓	✓	✓	✓
Harvard Medical School and Harvard Business School		✓	✓	✓	✓		✓	✓		✓
Indiana University School of Medicine & IU Kelley School of Business	✓	✓			✓	✓	✓	✓	✓	✓
University of Florida College of Medicine & College of Business Administration	✓	✓	✓	✓			✓	✓	✓	✓
Jefferson Medical College—Thomas Jefferson University & Widener School of Business Administration	✓	✓		✓	✓	✓	✓	✓	✓	✓
University of Kentucky College of Medicine & Gatton College of Business	✓		✓	✓			✓	✓	✓	✓
University of Michigan Medical School & Ross School of Business	✓	✓		✓			✓	✓	✓	✓
University of Minnesota Medical School & The Carlson School of Management	✓	✓		✓	✓	✓	✓	✓	✓	✓
The Ohio State University College of Medicine & The Fisher College of Business	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Saint Louis University School of Medicine & John Cook School of Business	✓		✓	✓		✓	✓	✓	✓	✓
Keck School of Medicine of the University of Southern California & The Marshall School of Business	✓	✓		✓			✓	✓	✓	✓
University of Texas Southwestern Medical Center at Dallas & University of Texas at Dallas	✓	✓	✓	✓		✓	✓	✓	✓	✓

(to be continued)

UMDNJ—New Jersey Medical School & Rutgers Business School	✓	✓	✓	✓			✓		✓	✓
Vanderbilt University School of Medicine & The Owen School of Management	✓	✓		✓	✓		✓	✓	✓	✓
University of California, Davis School of Medicine & Graduate School of Management	✓	✓		✓	✓		✓	✓	✓	✓
University of South Florida College of Medicine & The College of Business Administration	✓	✓		✓		✓	✓	✓	✓	✓
Brody School of Medicine at East Carolina University & ECU School of Business	✓	✓		✓	✓	✓	✓	✓		✓
Texas Tech University Health Sciences Center School of Medicine & Rawls College of Business Administration	✓				✓	✓		✓		
Mayo Medical College & Harvard Business School		✓	✓	✓	✓	✓		✓		✓
University of Illinois College of Medicine at Urbana—Champaign & College of Business Administration							✓	✓		
Case Western Reserve University School of Medicine & Weatherhead School of Management	✓	✓		✓	✓	✓	✓	✓	✓	✓
University of Arizona College of Medicine & Eller College of Management	✓	✓	✓	✓		✓	✓	✓	✓	✓
Boston University School of Medicine & Graduate School of Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UMDNJ—Robert Wood Johnson Medical School & Rutgers Business School	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
University of California, Irvine, College of Health Sciences School of Medicine & The Paul Merage School of Business	✓	✓		✓	✓	✓	✓	✓	✓	✓

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Tufts University School of Medicine & Northeastern University's Graduate College of Business Administration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pritzker School of Medicine & University of Chicago Graduate School of Business	✓	✓	✓	✓			✓	✓	✓	✓
University of Connecticut School of Medicine & Graduate Program in Business Administration	✓	✓		✓	✓	✓	✓	✓	✓	✓
David Geffen School of Medicine at UCLA & Anderson School of Management	✓	✓	✓	✓		✓	✓	✓	✓	✓
University of Rochester School of Medicine and Dentistry & Simon Graduate School of Business	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
University of Pennsylvania School of Medicine & Wharton School of Business	✓	✓	✓	✓	✓		✓	✓	✓	✓
University of Colorado Denver School of Medicine & UC Denver Business School	✓	✓		✓	✓	✓	✓	✓	✓	✓
Medical University of South Carolina College of Medicine & The Citadel School of Business	✓	✓		✓		✓	✓	✓	✓	✓
Boonshoft School of Medicine at Wright State University & Raj Soin College of Business	✓	✓	✓		✓	✓	✓	✓	✓	✓
University of Arkansas College of Medicine & UALR College of Business	✓	✓		✓		✓	✓	✓	✓	✓
Georgetown University School of Medicine & McDonough School of Business	✓	✓	✓	✓		✓	✓	✓	✓	✓
University of Cincinnati College of Medicine & College of Business Administration								✓	✓	
Northwestern University, The Feinberg School of Medicine & Kellogg School of Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

(to be continued)

Wake Forest University School of Medicine & School of Business	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Duke University School of Medicine & The Fuqua School of Business	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Emory University School of Medicine & Goizueta School of Business		✓		✓			✓	✓	✓	✓
Drexel University College of Medicine & LeBow College of Business	✓	✓		✓		✓	✓	✓	✓	✓
Mount Sinai School of Medicine & Baruch College of the City University of NY	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
University of Illinois College of Medicine & Liautaud Graduate School of Business		✓		✓	✓	✓	✓		✓	✓
Texas A & M and Mays Business School	✓	✓	✓	✓		✓	✓	✓		✓
Philadelphia College of Osteopathic Medicine & St. Joseph's School of Management	✓	✓	✓	✓	✓	✓		✓	✓	✓
Temple University School of Medicine & Fox School of Business	✓	✓		✓	✓	✓	✓	✓	✓	✓
Tulane University School of Medicine & Freeman School of Business	✓	✓	✓	✓			✓	✓	✓	✓

Table 2 lists the structure of the program, number of courses, program duration and average tuition charged. Typically, a student needs to complete four years of medical school and one to two years in a business school to complete the joint MD/MBA degree. The duration of the programs ranged from five to six years. Two programs reported that the joint degree can be accomplished in four years, 46 programs reported that it can be accomplished in five years; one program reported that it can be accomplished in six years; and several programs were flexible with respect to completion of the program within five to six years, depending on the students' preferences. The average number of courses was 18, with a range between 12 and 42 courses. The average number of semester hours needed to complete the MBA part of the program was 46, with a range of 19 to 65 hours. The tuition reported here is only for the MBA portion of the program. Average cost of the MBA program is \$35,810. The range was between \$14,011 and \$120,000.

Table 2

The Structure of the Program, Number of Courses, Program Duration and Average Tuition Charged

Names of school	Structure of the program/number of courses	Duration	Tuition
Baylor College of Medicine & Jones School of Management at Rice University	4 years of medical school + 1 year of management—19 core courses and 3 electives	5 years	Medical school fees + \$33,500 for the management school

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University of Buffalo School of Medicine & UB School of Management	12 core courses + 4 electives + 1 internship	5 years	Medical school fees + \$23,558 for the management school
Columbia University College of Physicians and Surgeons & Columbia Business School	4 years medical school + 13 core courses + 3 terms full-time at the business school	5 years	
Weill Cornell Medical School & Johnson School of Management at Cornell	4 years of medical school + 1 year of management school (10 core courses + a choice from 80 electives + internship/management practicum)	12 months post completion	\$67,700 for the 12 months' program
Dartmouth Medical School & Tuck School of Business	4 years of medical school + 12 core management courses in the 5th year + electives in the 6th year (optional)	5 years/6 years	
Harvard Medical School and Harvard Business School	25 + electives at HMS and MBS	5 years	Tuition and fees to HMS or MBS dependant on registration
Indiana University School of Medicine & IU Kelley School of Business	13 core courses + 2 electives	5 years	Medical school tuition, fees + \$20,250
University of Florida College of Medicine & College of Business Administration	14 core courses + electives	5 years	Medical school fees + \$26,500-\$28,000
Jefferson Medical College—Thomas Jefferson University & Widener School of Business Administration	18 core courses + 12 electives + 12 foundation credits	5 years	\$17,220
University of Kentucky College of Medicine & Gatton College of Business	6 pre-requisites + 7 core courses + 3 projects + 2 action learning labs + 2 professional workshops	5 years	
University of Michigan Medical School & Ross School of Business	12 core courses + 5 electives	5 years	
University of Minnesota Medical School & The Carlson School of Management	10 core courses + 8 electives	5 years	Medical school fees + \$20,625
The Ohio State University College of Medicine & The Fisher College of Business	10 core courses + 2 electives	5 years	Medical school fees + \$72,500
Saint Louis University School of Medicine & John Cook School of Business	16 core courses + 4 electives	5 years	\$535 per credit hour = \$25,680
Keck School of Medicine of the University of Southern California & The Marshall School of Business	12 core courses + 4 electives	5.5 years	Medical school fees + \$39,750
University of Texas Southwestern Medical Center at Dallas & University of Texas at Dallas	14 core courses + 2 electives	5 years	Medical school fees + \$23,393
UMDNJ—New Jersey Medical School & Rutgers Business School	7 core courses + 5 electives	5 years	Medical school fees + \$48,822
Vanderbilt University School of Medicine & The Owen School of Management	11 core courses	5 years	Medical school fees + \$37,834
University of California, Davis School of Medicine & Graduate School of Management	24 courses—7 required + 4 breadth courses + 13 electives	5 years	Medical school fees + \$24,069
University of South Florida College of Medicine & the College of Business Administration	10 core courses + 4 electives + 6 electives	5 years	

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Brody School of Medicine at East Carolina University & ECU School of Business	14 required courses + electives (42 semester hours)	5 years	Medical school fees + \$14,800
Texas Tech University Health Sciences Center School of Medicine & Rawls College of Business Administration	4 years of medical school + 51 hour MBA-health organization management (includes summers before and after 1st year curriculum) MBA includes core curriculum + 8 health organization management specific courses	4 years	
Mayo Medical College & Harvard Business School	11 core courses + electives	5 years	\$34,998
University of Illinois College of Medicine at Urbana-Champaign & College of Business Administration	15 courses	5/6 years	Medical school fees = \$49,582
Case Western Reserve University School of Medicine & Weatherhead School of Management	10 core courses + 4 electives	5 years	\$1,339 per credit hour (42 credit hours) = \$56,238
University of Arizona College of Medicine & Eller College of Management	43 credits (includes independent study on health related issue or healthcare entrepreneurship project)	5 years	\$325.84 per credit = \$14,011
Boston University School of Medicine & Graduate School of Management	50 credits	5 years	\$34,930
UMDNJ—Robert Wood Johnson Medical School & Rutgers Business School	60 credits	5 years	\$254 per credit hour = \$15,420 for the MBA
University of California, Irvine, College of Health Sciences School of Medicine & The Paul Merage School of Business	4 years of medical school + 12 core courses + 10 electives	5/6 years	
Tufts University School of Medicine & Northeastern University's Graduate College of Business Administration	65 credits	4 years	\$292 per credit hour = \$18,980
Pritzker School of Medicine & University of Chicago Graduate School of Business	9 core courses + 11 electives	5/6 years	\$120,000
University of Connecticut School of Medicine & Graduate Program in Business Administration	42 credits	5 years	\$41,000
David Geffen School of Medicine at UCLA & Anderson School of Management	15 courses—three components—institutional finance, leadership and management	5 years	\$30,000 per academic year
University of Rochester School of Medicine and Dentistry & Simon Graduate School of Business	9 core courses + 11 electives	5 years	\$56,726
University of Pennsylvania School of Medicine & Wharton School of Business	19 credit units	5 years	\$44,795
University of Colorado Denver School of Medicine & UC Denver Business School	30 credit hours / 25 months	6 years	\$45,242
Medical University of South Carolina College of Medicine & The Citadel School of Business	14 core courses + 2 electives	5 years	\$383 per credit hour = \$18,384
Boonshoft School of Medicine at Wright State University & Raj Soin College of Business		5 years	\$28,288 per year for MBA

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University of Arkansas College of Medicine & UALR College of Business	51 credit hours	5/6 years	\$568 per credit hour = \$28,968
Georgetown University School of Medicine & McDonough School of Business	17 core courses + 16 electives	5 years	\$35,568
University of Cincinnati College of Medicine & College of Business Administration	10 courses - 4 core + 6 electives	5 years	
Northwestern University, The Feinberg School of Medicine & Kellogg School of Management	12 quarters of medical school (4 years) + 18 managerial courses (8 core courses + 10 healthcare courses) with a major in health industry management across 4 quarters	5 years	
Wake Forest University School of Medicine & School of Business	16 management courses + 4 years of medical school + electives	5 years	The tuition rate of the school with the higher rate
Duke University School of Medicine & The Fuqua School of Business	10 core courses + electives (health management or other specialization)	5 years	\$44,100 per academic year
Emory University School of Medicine & Goizueta School of Business	9 core courses + 11 electives	5 years	\$7,500 per semester = \$22,500
Drexel University College of Medicine & LeBow College of Business	15 core courses + 5 electives in healthcare systems	5 years	\$2,625 per class = \$52,500
Mount Sinai School of Medicine & Baruch College of the City University of NY	57 credit hours	5 years	\$18,513 per academic year ¹
University of Illinois College of Medicine & Liautaud Graduate School of Business	48 credits	5 years	\$649 per credit hour = \$31,152
Texas A&M and Mays Business School	49 course hours	5 years	
Philadelphia College of Osteopathic Medicine & St. Joseph's School of Management	36-42 credits	5 years	
Temple University School of Medicine & Fox School of Business	54 credits		\$630 per credit hour = \$34,020
Tulane University School of Medicine & Freeman School of Business	45-48 credits—core + electives	5 years	\$1,175 per credit hour = \$2,875-\$56,400

Location

Figure 2 shows the geographic distribution across the US. Of the 52 programs, 33.9% are located in the Northeast region, 28.6% are located in the Southern region, 23.21% are located in the Midwest region, and 12.5% are located in the West.

Discussion

The focus of this research is to assess the distinctiveness of existing MD/MBA programs and identify emerging disciplines in the business curriculum for physician development. The need for business education for physicians has been discussed elsewhere (Reinstern, 1998; Bodenheimer & Casalino, 1999; Lighter, 2000; Wenger, 2006). Levin (2000) argued that physicians with business training made better managerial decisions than did those without such training. Falcone and Satiani (2008) recognized that physicians who aspired to be hospital CEOs (chief executive officers) could benefit from both medical and business education and noted an

increase in the number of hospital CEOs who were physicians. They also asserted that MD/MBA graduates may be well positioned to “jumpstart” their administrative careers in healthcare. Parekh and Singh (2007) noted that physicians who were dually trained in medicine and business would be better positioned to overcome the current challenges of the healthcare delivery system and to lead transformational change. A study conducted by Ruth Collins-Nakai (2006), “Leadership in Medicine” recognized the need for physicians to be trained in the requisite skills that they do not acquire during their medical training.

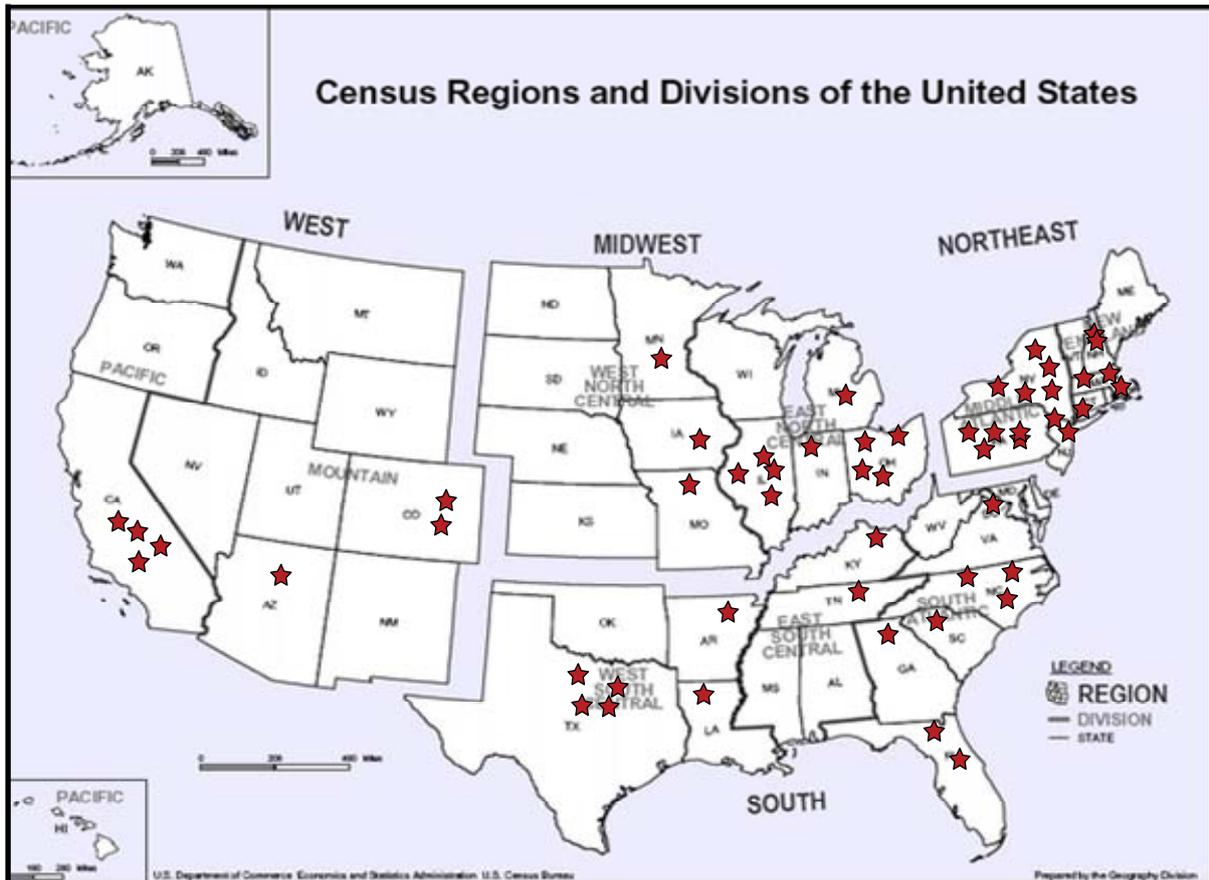


Figure 2. The geographic distribution across the US of the 52 programs.

Future revisions of this study will include additional specialized programs offered at US and Canadian universities, including DO/MBA programs, as well MD/Master of Health Administration and MD/Master of Public Health.

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