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The MD/MBA Effect: A Study of How Residency Directors Perceive Applicants with an MBA

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The MD/MBA Effect:

A Study of How Residency Directors Perceive Applicants with an MBA

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Title: The MD/MBA Effect: A Study of How Residency Directors Perceive Applicants with an MBA

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Abstract: *Background*: The recent increase in the number of programs offering a combined medical doctorate and masters in business administration (MD/MBA) degree means an increase in the number of medical students with MBAs applying for residency training. While these students hope that residency program directors will see the benefits of having on staff a resident with business skills many, however are now confronted with some of the medical community's negative attitudes toward business and management. These students are concerned about the perception that those who seek business training have "sold out" or "are in it for the money" and whether this bias will become an issue when applying for residency training. Then there are more substantiated concerns involving program completion or dedication to clinical practice. Will these aspiring future leaders in medicine be recognized for the extra dedication to pursue the joint degree or is the fear that these students will be perceived as less favorable to the residency directors making the decisions be warranted?

Purpose: The purpose of this project is to test the following hypothesis: Completing an MBA as a medical student will have an impact on residency directors' decisions to accept MD/MBA students into their residency programs. This project also aims to assess whether such an impact would be positive or negative.

Methods: Four specialties were chosen. Internal medicine and radiology were selected as the two non-surgical specialties while general surgery and orthopedic surgery were selected as the two surgical specialties. This study is based on surveys completed by program directors via email between December 2006 - February 2007 and is designed to assess the opinions and attitudes they have toward candidates enrolled in the joint degree MD/MBA programs. This study uses scaled responses from 1 through 5 with 1 being strongly positive and 5 being strongly negative.

Results: There were 244 surveys returned from residency directors across the country (29% response rate, n=851). When residency directors were asked to characterize the effect of the joint degree the results showed that overall there seems to be a positive bias toward those applicants with MBAs (mean score of 2.44, 95% C.I. 2.34, 2.53). However, there was some difference of opinion among the specialties with general surgery having only 2% (1/55) of program directors indicating a strongly positive effect while 13% (7/54) of radiology program directors responded with a strongly positive effect. Also notable was that 28% (18/65) of general surgery program directors agreed that an important concern was that a resident with an MBA may not complete the program, while only 7% (4/59) of radiology program directors agreed.

Conclusions: According to the results in this thesis medical students applying to residency with an MD/MBA will indeed have a slight advantage over their MD only counterparts. However, even though on average there appears to be a positive benefit to completing an MBA while in medical school there is a minority of directors in all four specialties that view the MBA as a negative. The next step is to expand on this study to verify this positive effect, validate the concerns and to understand more about the colliding cultures of medicine and business.

Acknowledgements and table of contents:

Special thanks to Dr. Howard Forman

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Introduction:

As the landscape of medicine rapidly changes in this first decade of the 21st century physicians are faced with new challenges beyond that of conducting a thorough history and physical exam. As medicine evolves patient care has become increasingly dependent on more than just empathetic caring physicians working feverishly at the bed side to establish a differential diagnosis and treatment plan. Physicians and hospitals are finding it progressively more difficult to continue to provide quality care to patients while managing the problems associated with managed care systems, Medicare, reimbursements, government regulations, shareholders, budget constraints, etc. Many physicians are now realizing that the business of medicine has become as integral to patient care as the practice of medicine. And now with the Centers for Medicare & Medicaid Services stating that the percentage of the gross domestic product spent on health care reached over 16% as of 2005, treating patients has become a big business. Combine the business of medicine with the need for better governmental oversight and fiscal management to sustain Medicare, regulate the pharmaceutical industry, and care for an increasing number of uninsured and the need for trained physicians with business skills in the public policy arena becomes apparent as well. In recognition of this need for physicians trained in the dual disciplines of medicine and business, universities across the country have responded by creating joint degree programs for students to study and learn not just the disciplines as separate entities but how they interact and depend on one another. According to the American Association of Medical Colleges there are currently 49 programs in the U. S. that combine a master in business administration with that of a medical doctorate. This joint degree is referred to as an MD/MBA.

This increase in the number of MD/MBA programs has been a relatively recent occurrence with the majority being established within the past decade. This fact, which has been well documented by Dr. Forman et al, indicates a newly found cooperation between the medical and business schools (1). The research demonstrates the greatest increase in the number of collaborative programs between 1993 and 2002. As is fundamental to the business school curriculum, for an initiative to be successful it must be accepted by its prospective customers. In this case the customers for the joint degree programs are the medical students. The decision made by these students to pursue the dual disciplines is based on a myriad of factors. Some of the most common include opportunities for leadership roles, opportunities for innovation, and a chance to "make a difference in medicine" as well as some personal career goals (2). Some research has shown that simply offering this joint degree influences a student's career path decision as well as "their perceptions of the legitimacy of the role and function of the physician executive" (2). A common thread among most students seeking this extra training is leadership ability. These students then seek education that can lead them to a career path to utilize this talent. One characteristic shown to be associated with leadership ability is the tolerance of ambiguity. Research done by Windsor Westbrook Sherrill has shown that medical students who seek this joint degree have a higher tolerance of ambiguity than traditional medical students (3).

Regardless of the reasons these students choose to pursue the joint degree they will most likely follow the traditional path to residency. These students, like that of almost all graduating medical students, fill their applications with all the accolades and accomplishments they have achieved in medical school and now more recently in

business school. The inclusion of this business school training is precisely what gives many of these students cause for concern. There are many in the medical field that feel there is a sense those physicians in business or management are somehow "traitors" and therefore less empathetic and caring than are full time clinicians. As documented in the recent article "The Traitor Complex" medical students seeking business training are often viewed to have "sold out" or are only seeking careers in management for the money (4). This article published in the Physician Executive in 2005 quotes numerous students relaying comments from the student body, physicians, and even faculty. Remarks made to students seeking business training such as "will compromise the MD" and "couldn't have both business and patient interests in mind at once" offer insight into the bias that exists against this group of students.

. The ultimate goal for a residency program director in selecting a resident is to accept candidates that will be successful physicians in training. This success is often defined not just by patient care but by other factors such as publications and presentations as well as in-training test scores. The criteria that directors use to make decisions on applicants applying to residency programs have been studied as well. It was found in one resource that success during residency was predicted best by an interviewer's impression of the candidate and higher USMLE Step 1 scores (6). Other studies attempted to discover what factors program directors used in ranking candidates. One investigation done in orthopedic surgery revealed responses such as the medical student completed a rotation at the director's institution, along with USMLE scores and rank in medical school as some of the top criteria used by program directors when assessing an applicant (7). Another study done in orthopedic surgery attempted to standardize some of the

more subjective criteria used by directors to assess applicants. By using some of the in-training exams as measures for success this study was able to accurately predict, retrospectively, the success of orthopedic residents (8). There was another study published in academic radiology from 2006 that included the dean's letter as second only to USMLE scores as the most important criteria used to assess applicants by residency directors (9). Research has even been done on clerkship grades and the results showed that this was likely an unreliable determinant of a medical student's success in residency since there was too much variability among medical school grading systems (10). There seems, however to be a paucity of data on the opinions of directors toward those medical students with other advanced degrees such as an MBA or even on a director's opinion of any business skills that an applicant might have. Medical students are taught to think in an evidence based fashion, but in this case there seems to be little evidence for this growing population of future doctors to rely on to make decisions concerning their prospective career paths.

While this increase in the number of medical students seeking business and management training is welcomed by much of the medical community many of these students are keenly aware of the biases that exist and inevitably feel that they might be disadvantaged when it comes time to apply for residency training. There exists the fear that many residency directors might gloss over the high test scores and glowing recommendations by faculty and see only that they are completing an MBA and are therefore less committed to the practice of clinical medicine. Some students question whether residency programs will recognize the extra training in areas such as such as finance and operations as relevant to the delivery of quality patient care. Others fear that

the residency directors might be concerned that they are not truly dedicated and will not complete the program in its entirety or will choose not to practice clinically after training. While the biases of the medical community toward the business world have been documented this thesis attempts to assess whether these biases impact the decisions made by residency directors when deciding on which medical students to invite into their programs. This thesis will also attempt to assess whether that impact might be positive or negative and test a few of the most common concerns.

Purpose:

The purpose of this thesis is to test the following hypothesis:

> Completing an MBA as a medical student will have an impact on residency directors' decisions to accept MD/MBA students into their residency programs.

The objective is simply to discover whether or not a relationship exists between students that are completing MBAs and their ability to gain acceptance to a residency program. This thesis also then attempts to assess whether this relationship is positive, like many joint degree students hope or is negative, like some may fear. As noted previously the rapid rise in the number of students seeking this extra training warrants a thorough investigation of the opinions and attitudes of residency directors toward these applicants. To begin this investigation an attempt is made to assess the current state of the attitudes and opinions of residency directors toward medical students that complete an MBA while in medical school. This thesis also considers several positive aspects of having an MBA and several concerns that directors may have about these students.

For example, as is illustrated on the survey form (fig 1) an assessment was made as to the extent to which directors agree or disagree with statements regarding the possibility that a resident with an MBA may not complete the program and would therefore leave in the middle of training. This is of particular interest since many institutions depend on these residents to serve vital patient caring functions and often rely on them to act as the main caretakers on the front lines of hospitals. Another assessment was made as to the extent that directors may be concerned that an applicant would not practice clinically after completion of the program. This is an interesting concern since

this does not truly have any bearing on the resident's performance during training, other than possible motivation, but more an assessment of how the residency directors view the purpose of their respective programs.

This thesis then attempts to try and find any correlations that may exist between the responses and the particular demographics of the program directors. These demographic groups include not only the typical measures such as age and gender but also some others that are more specific to the topic such as whether or not the director him/herself has an MBA and if there are any faculty members in his/her department with an MBA. This was done in an attempt to ascertain a source for any bias, whether it is positive or negative, that may exist.

Methodology:

After establishing the purpose and then outlining a clear hypothesis it was decided to test this hypothesis by assessing the opinions and attitudes of the decision makers themselves, the residency program directors. This was done by sending surveys via email to all residency directors of programs in Internal Medicine, Radiology, Orthopedic Surgery, and General Surgery. Internal Medicine and Radiology were selected as the two non-surgical specialties and General Surgery and Orthopedic Surgery were selected as the two surgical specialties. The resource used to compile the program database was the Fellowship and Residency Electronic Interactive Database (FREIDA) which is a website maintained by the American Medical Association as a resource to medical students applying for residency training. According to the FREIDA website in November of 2006 there were 187 Radiology-Diagnostic programs, 369 Internal Medicine programs, 248 General Surgery programs, and 152 Orthopedic Surgery programs. Once a template was created and after a brief training session, the actual building of the program database from the website into an excel format was done by a research assistant. Once this database of all residency programs and the associated program directors was completed and put into an excel format, it could be easily updated and manipulated as surveys were tabulated.

The survey form (fig 1) was then designed to best capture the attitudes and opinions that residency directors might have toward the applicants with the joint MD/MBA degree. This was done by first blatantly asking the question as to whether or not the presence of an MBA would have a positive or negative influence on your assessment of any particular applicant. Subsequent questions centered on assessing the

level and possible reasons for the response to the initial question. The survey was designed to assure that an explanation of the study could be read and the survey completed in around five minutes to increase the response rate. The main outcome measures were to be the means of the individual five-item scaled responses to the particular questions on the survey form and then analyze these means and their correlation to any particular demographic group that was tested. There was also one open ended question that allowed the directors to discuss any factors not mentioned on the survey that might be considered when assessing an applicant with business training. These comments could range from personal beliefs to experiences that have molded the directors' attitudes toward residents that have an MBA. The survey form was then tested on a number of faculty members from different departments throughout the Yale Medical School campus to check for any problems that may arise. After much feedback the survey form was revised multiple times until it was finally realized that no survey form would satisfy everyone and that even the most well designed surveys would have critics.

Before the study could commence, approval from the Human Investigations Committee was sought. This study has been reviewed by the Yale Human Investigations Committee and has been granted an exemption status under federal regulation 45 CFR 46.101(b) (2).

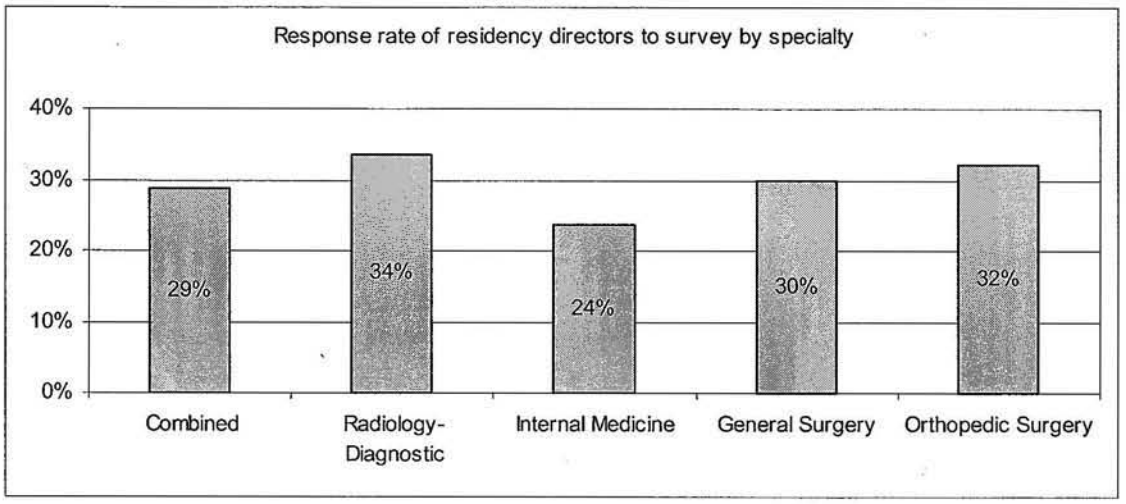
After the database was created and the survey form finalized an email account was set up specifically to handle the correspondence with the hundreds of physicians participating in this study. Next, an email was written containing a brief description of the project as well as assurances that all data gathered would be kept strictly confidential and that neither the residency program nor its director would be connected in any way to

the final results. Then the survey was attached and the email was sent out to program directors across the country. The returned completed surveys were then entered into the database along with any extra comments made by the individual directors. This allowed meticulous record keeping of the survey collection process so that as reminder emails were sent out, the same directors were not contacted further once they had responded with a completed survey.

Results:

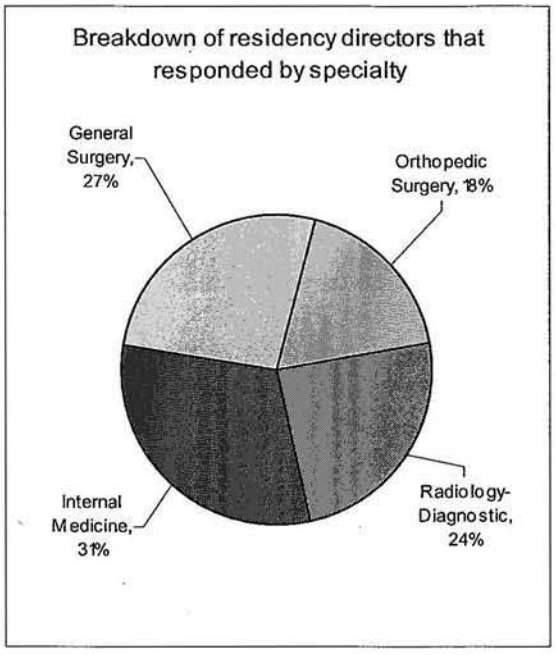
Demographics:

After sending out 854 emails containing the survey (fig. 1) 244 completed survey forms were returned. These surveys were received between December of 2006 and February of 2007. The overall response rate for all four specialties combined was 29% (244/851). The response rates for the 176 radiology-diagnostic programs, 321 internal medicine programs, 218 general surgery programs, and 137 orthopedic surgery programs are displayed in the graph below:



Source data for percentages		/ n
Combined	29%	244 / 851
Radiology-Diagnostic	34%	59 / 176
Internal Medicine	24%	76 / 321
General Surgery	30%	65 / 218
Orthopedic Surgery	32%	44 / 137

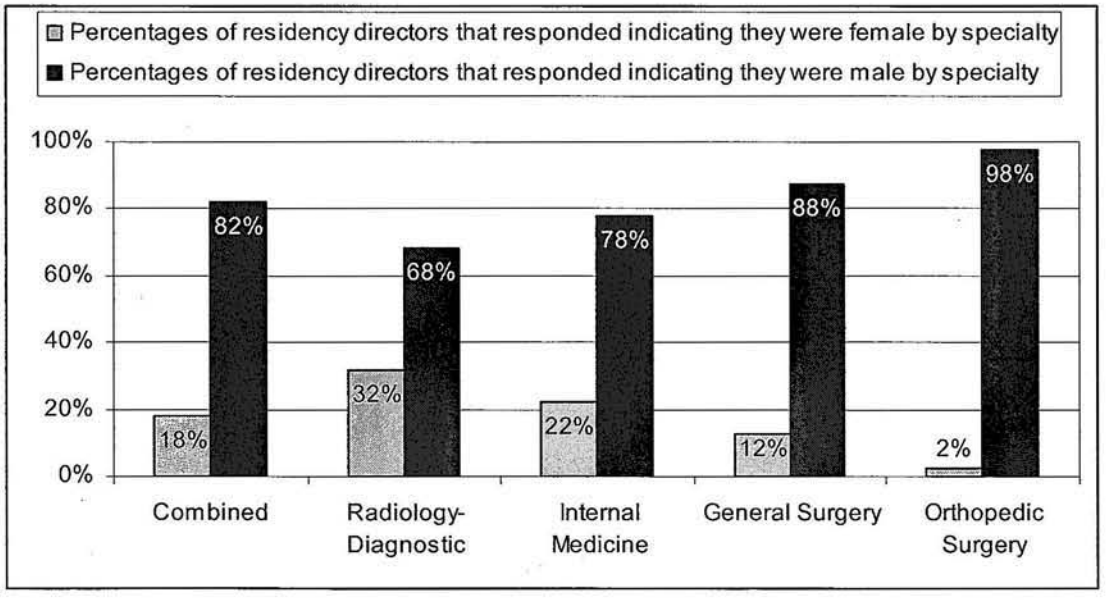
As can be seen in the graph above the response rate was over 30% for all specialties except for Internal Medicine, which had only a 24% (76/321) response rate. However since internal medicine had the greatest number of programs they made up the largest percentage of the responded directors. The breakdown of the 244 responses by specialty is presented in the chart below:



Source data for percentages		n = 244
Radiology-Diagnostic	24%	59 / 244
Internal Medicine	31%	76 / 244
General Surgery	27%	65 / 244
Orthopedic Surgery	18%	44 / 244

The specialty of internal medicine had the highest percentage of total respondents with 31% (76/244) followed by general surgery, radiology, and orthopedic surgery with 27% (65/244), 24% (59/244), and 18% (44/244) respectively.

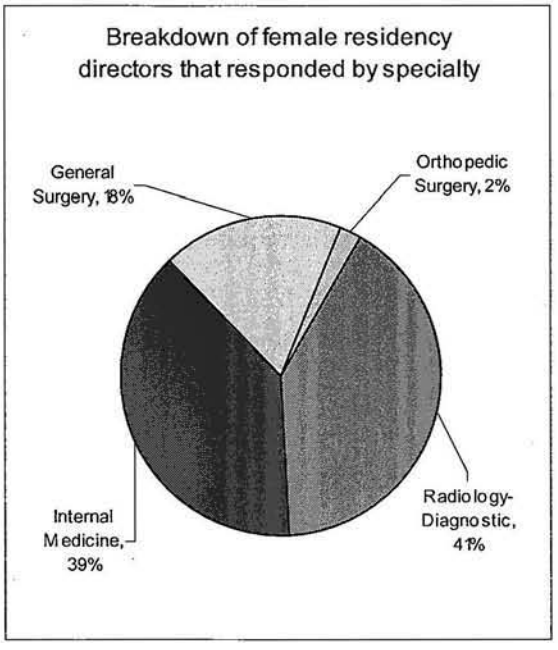
Data was also gathered as to the gender make up of the program directors that responded. The breakdown of the specialties by percent of female and male directors that responded to the survey is displayed on the graph below:



Source data for percentages (female)		/ n
Combined	18%	44 / 242
Radiology-Diagnostic	32%	18 / 57
Internal Medicine	22%	17 / 76
General Surgery	12%	8 / 65
Orthopedic Surgery	2%	1 / 44

Source data for percentages (male)		/ n
Combined	82%	198 / 242
Radiology-Diagnostic	68%	39 / 57
Internal Medicine	78%	59 / 76
General Surgery	88%	57 / 65
Orthopedic Surgery	98%	43 / 44

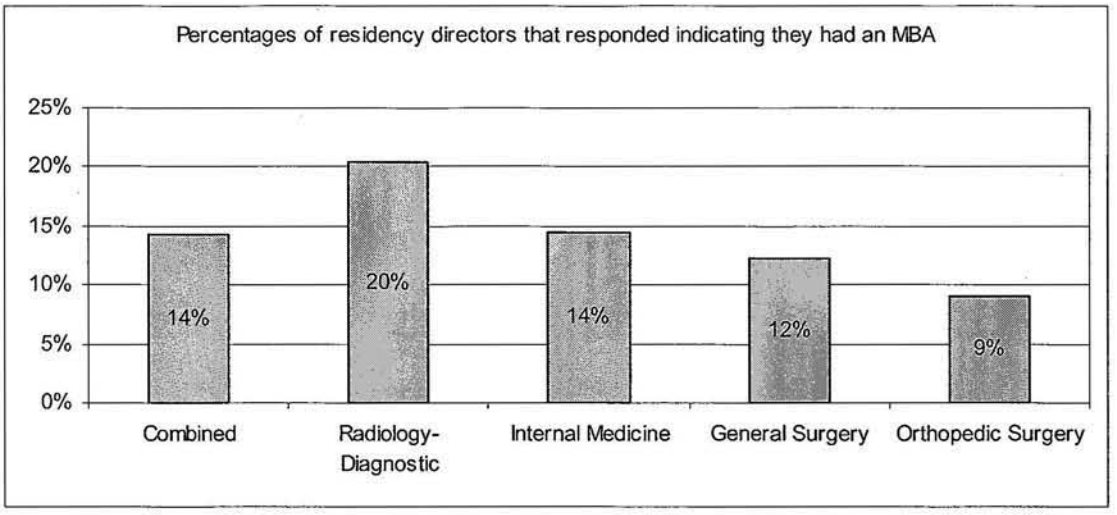
Noted on the source data tables is that the total number of directors that responded with a gender is 242 since two directors that responded did not indicate whether they were male or female on the survey form that was sent back. There were 44 total respondents that stated they were female. Orthopedic surgery had the smallest percentage with only 2% (1/44) of program directors that responded indicating they were female. The percentage of these female responders is broken down by specialty and displayed below:



Source data for percentages		n = 44
Radiology-Diagnostic	41%	18 / 44
Internal Medicine	39%	17 / 44
General Surgery	18%	8 / 44
Orthopedic Surgery	2%	1 / 44

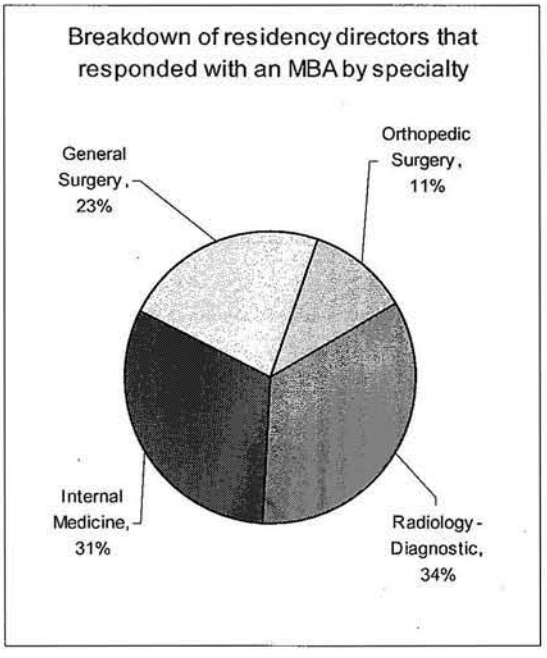
Radiology had the highest percentage of total female respondents with 41% (18/44) followed by internal medicine, general surgery, and orthopedic surgery with 39% (17/44), 18% (8/44) and 2% (1/44) respectively.

Another demographic group that was measured was the directors that responded indicating they had MBAs themselves. This data is displayed below:



Source data for percentages		/ n
Combined	14%	35 / 244
Radiology-Diagnostic	20%	12 / 59
Internal Medicine	14%	11 / 76
General Surgery	12%	8 / 65
Orthopedic Surgery	9%	4 / 44

Of the 244 residency directors that responded to the study only 14% (35/244) indicated that they had completed an MBA. The 35 responders that had MBAs are broken out into the specialties in the graph below:

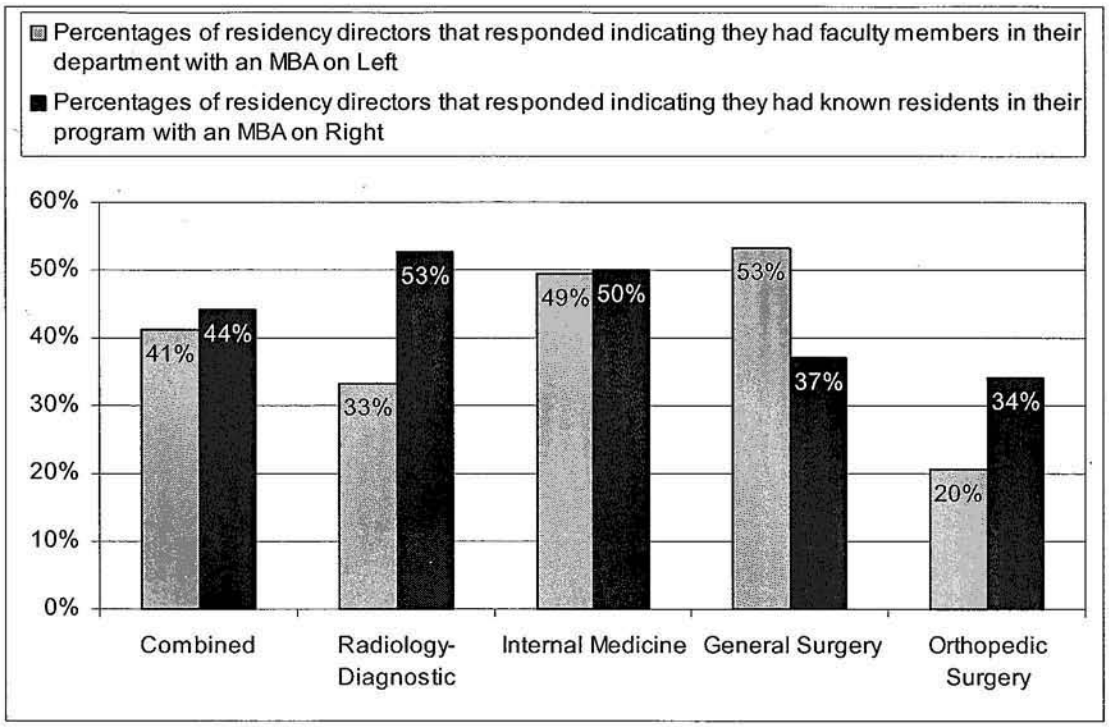


Source data for percentages	n = 35	
Radiology-Diagnostic	34%	12 / 35
Internal Medicine	31%	11 / 35
General Surgery	23%	8 / 35
Orthopedic Surgery	11%	4 / 35

Radiology had the highest percentage of total directors indicating they had an MBA with 34% (12/35) followed by internal medicine, general surgery, and orthopedic surgery with 31% (11/35), 23% (8/35) and

11% (4/35) respectively.

Another piece of demographic data was the directors' exposure to residents and faculty that had MBAs in their respective programs. The survey (fig. 1) asks whether or not directors had known residents in their program with an MBA and also asks whether or not they had any faculty members in their respective departments with an MBA. The results of this question are presented in the graph below:



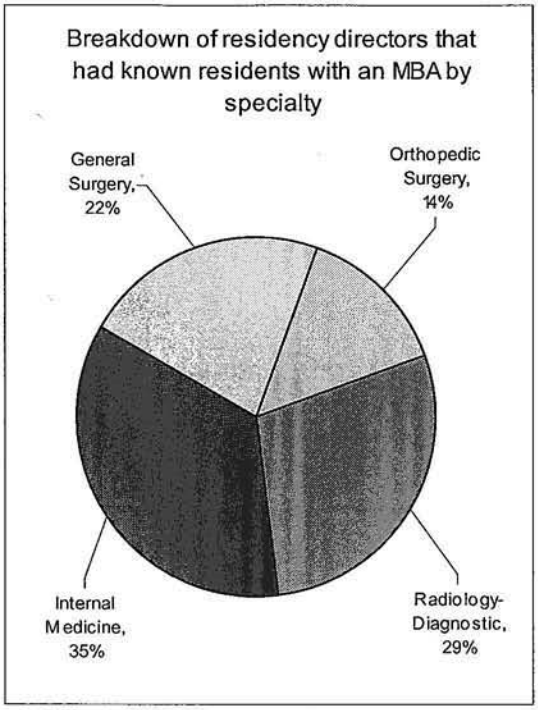
Source data for faculty in department		/ n
Combined	41%	99 / 240
Radiology-Diagnostic	33%	19 / 57
Internal Medicine	49%	37 / 75
General Surgery	53%	34 / 64
Orthopedic Surgery	20%	9 / 44

Source data for known residents		/ n
Combined	44%	108 / 244
Radiology-Diagnostic	53%	31 / 59
Internal Medicine	50%	38 / 76
General Surgery	37%	24 / 65
Orthopedic Surgery	34%	15 / 44

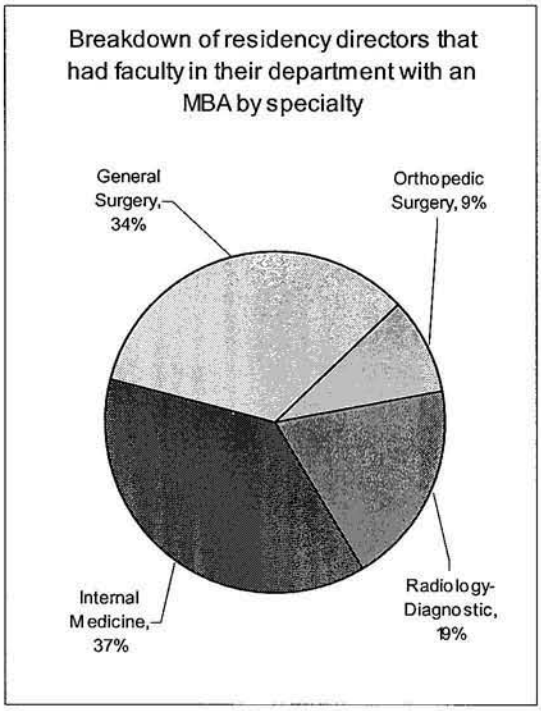
44% (108/244) of all respondents had some association with residents currently or previously in their program that had an MBA and 41% (99/240) of the respondents had known faculty members that had an MBA. Of all the directors that responded it seems

that general surgery and internal medicine had the highest percentage of associated faculty members with MBAs with 53% (34/64) and 49% (37/75) respectively.

There were 99 directors that responded indicating they had faculty in their department with an MBA and there were 108 directors that responded indicating they had known residents with MBAs. The breakdown of these respondents by specialty is noted in the two graphs below:



Source data for percentages		n = 99
Radiology-Diagnostic	19%	19 / 99
Internal Medicine	37%	37 / 99
General Surgery	34%	34 / 99
Orthopedic Surgery	9%	9 / 99



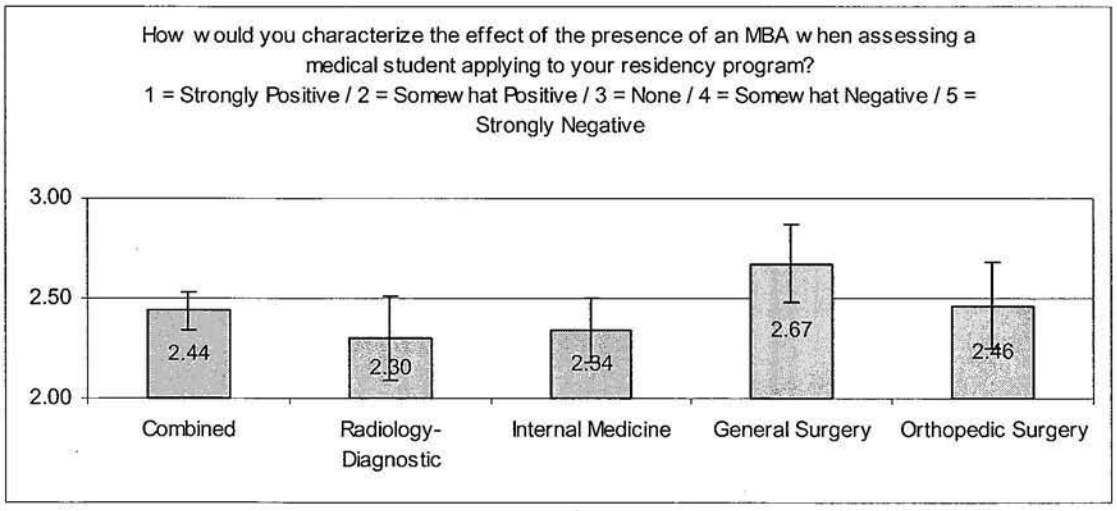
Source data for percentages		n = 108
Radiology-Diagnostic	29%	31 / 108
Internal Medicine	35%	38 / 108
General Surgery	22%	24 / 108
Orthopedic Surgery	14%	15 / 108

Internal medicine had the highest percentage with 35% (38/108) of directors that had known residents in their programs with an MBA followed by radiology, general surgery, and orthopedic surgery with 29% (31/108), 22% (24/108), and 14% (15/108) respectively. Internal medicine also had the highest percentage with 37% (37/99) of

directors that had faculty in their department with an MBA in their program followed by general surgery, radiology and orthopedic surgery with 34% (34/99), 19% (19/99), and 9% (9/99) respectively.

Question # 1:

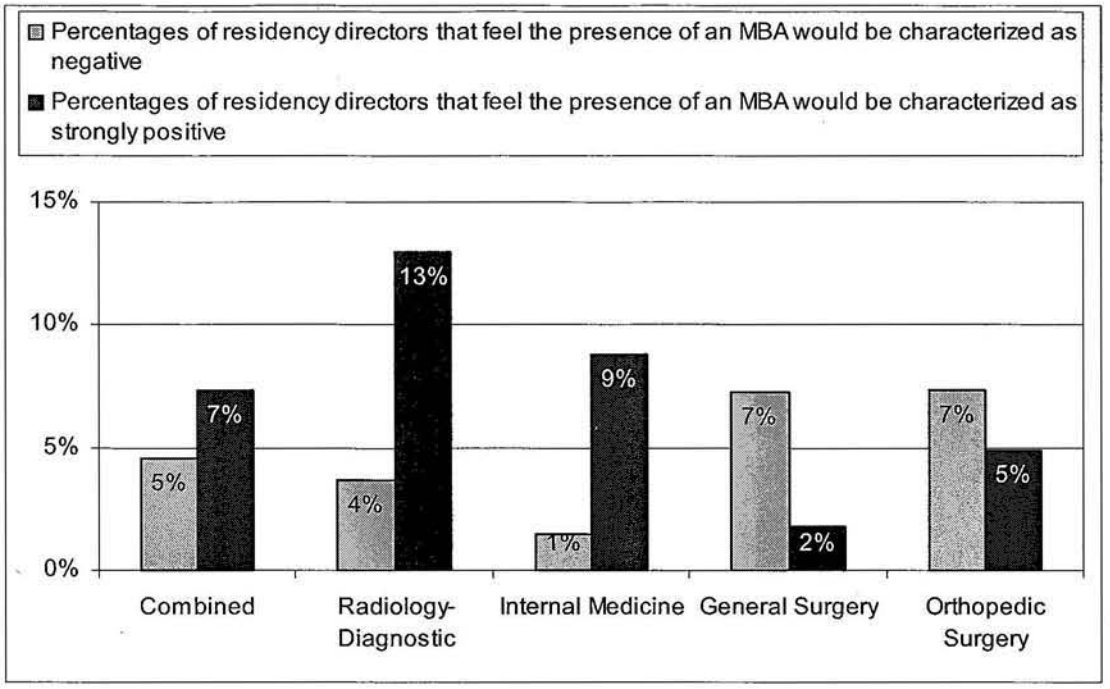
Question number one states: "How would you characterize the effect of the presence of an MBA when assessing a medical student applying to your residency program?" The responses available were as follows: 1 = Strongly Positive, 2 = Somewhat Positive, 3 = none, 4 = Somewhat Negative and 5 = Strongly Negative. This first question had the highest percentage of directors that did not answer on the survey form. There were 26 surveys that did not have a response to this question. Therefore the means were based on the 218 surveys that had valid responses. The following graph depicts the mean scores of question number one from the survey combined and then divided up by specialty:



95% Confidence Intervals for responses in question # 1				
Combined:	2.44	+/-	0.10	(2.34, 2.53)
Radiology-Diagnostic:	2.30	+/-	0.21	(2.09, 2.51)
Internal Medicine:	2.34	+/-	0.16	(2.18, 2.50)
General Surgery:	2.67	+/-	0.20	(2.48, 2.87)
Orthopedic Surgery:	2.46	+/-	0.22	(2.25, 2.68)

As can be seen in the graph above, the mean for all four specialties was below three, meaning that the majority of the responses were either no opinion, somewhat positive or strongly positive in regard to the effect of an applicant having completed an MBA. General surgery had the highest mean or the closest mean to 3 with 2.67 (C.I. 2.48, 2.87) and therefore had the least responses of no opinion, somewhat positive or strongly positive. In contrast was radiology which had the lowest and most positive mean response with 2.30 (C.I. 2.09, 2.51). This reveals that of the directors that responded the radiology specialty on average feels that the MBA would reflect most positively on the applicant and general surgery the least positive.

The individual responses were isolated to breakdown which specialties characterized the presence of an MBA as negative, which includes responses of somewhat negative and strongly negative, and which specialties would characterize the presence of an MBA as strongly positive. The results are presented on the graph below:

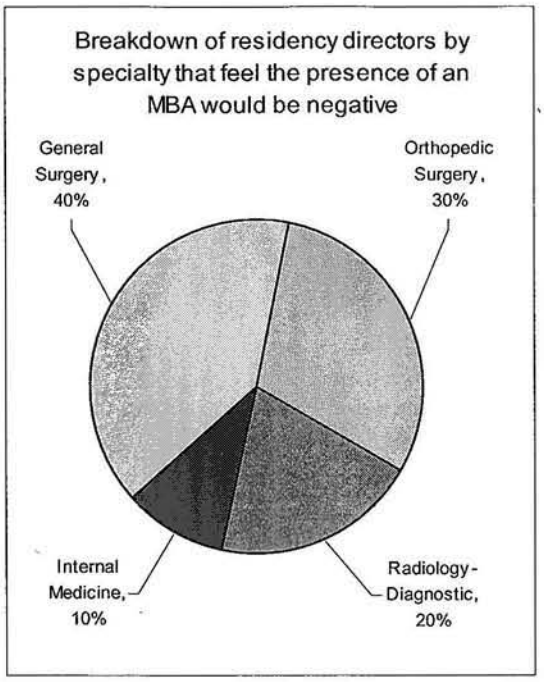


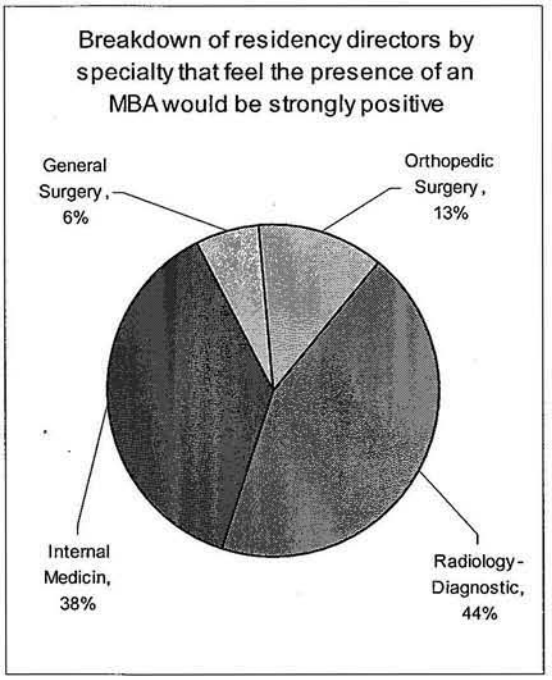
Negative effect		/ n
Combined	5%	10 / 218
Radiology-Diagnostic	4%	2 / 54
Internal Medicine	1%	1 / 68
General Surgery	7%	4 / 55
Orthopedic Surgery	7%	3 / 41

Strongly positive effect		/ n
Combined	7%	16 / 218
Radiology-Diagnostic	13%	7 / 54
Internal Medicine	9%	6 / 68
General Surgery	2%	1 / 55
Orthopedic Surgery	5%	2 / 41

The radiology program directors had the most favorable response percentage with 13 % (7/54) of directors stating that they would characterize the extra degree as strongly positive and only 4% (2/54) as negative. Internal medicine had the least negative responses with only 1% (1/68) and 9% (6/68) with strongly positive responses. These are in contrast to the directors in general surgery whereby 7% (4/55) would view the MBA as negative and only 2% (1/55) as strongly positive.

This data was broken down by specialty to reveal what percentages of all positive and negative responses were from each individual specialty. The graphs below break down the percentages of positive responses and negative responses by specialty:



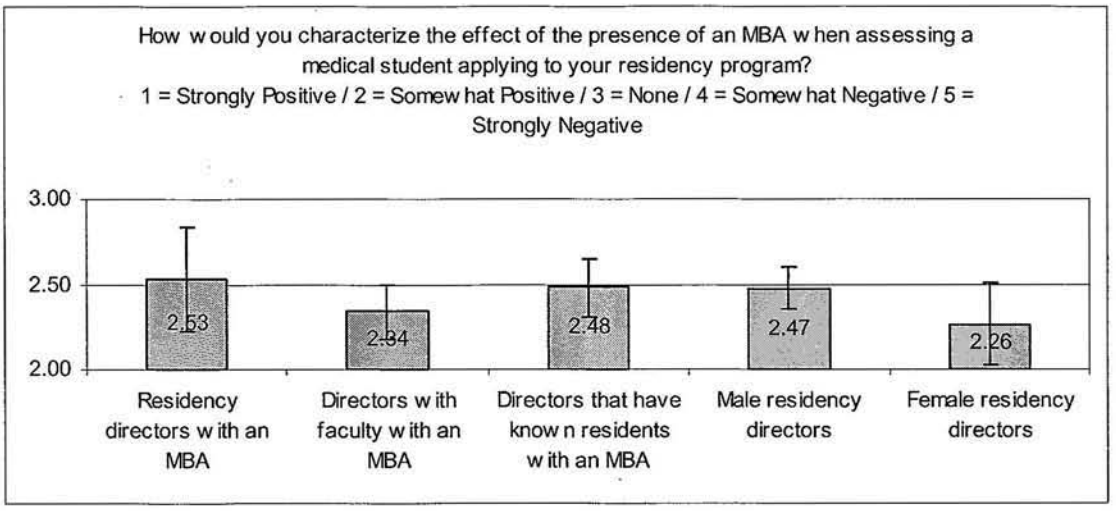


Source data for percentages		n = 10
Radiology-Diagnostic	20%	2 / 10
Internal Medicine	10%	1 / 10
General Surgery	40%	4 / 10
Orthopedic Surgery	30%	3 / 10

Source data for percentages		n = 16
Radiology-Diagnostic	44%	7 / 16
Internal Medicine	38%	6 / 16
General Surgery	6%	1 / 16
Orthopedic Surgery	13%	2 / 16

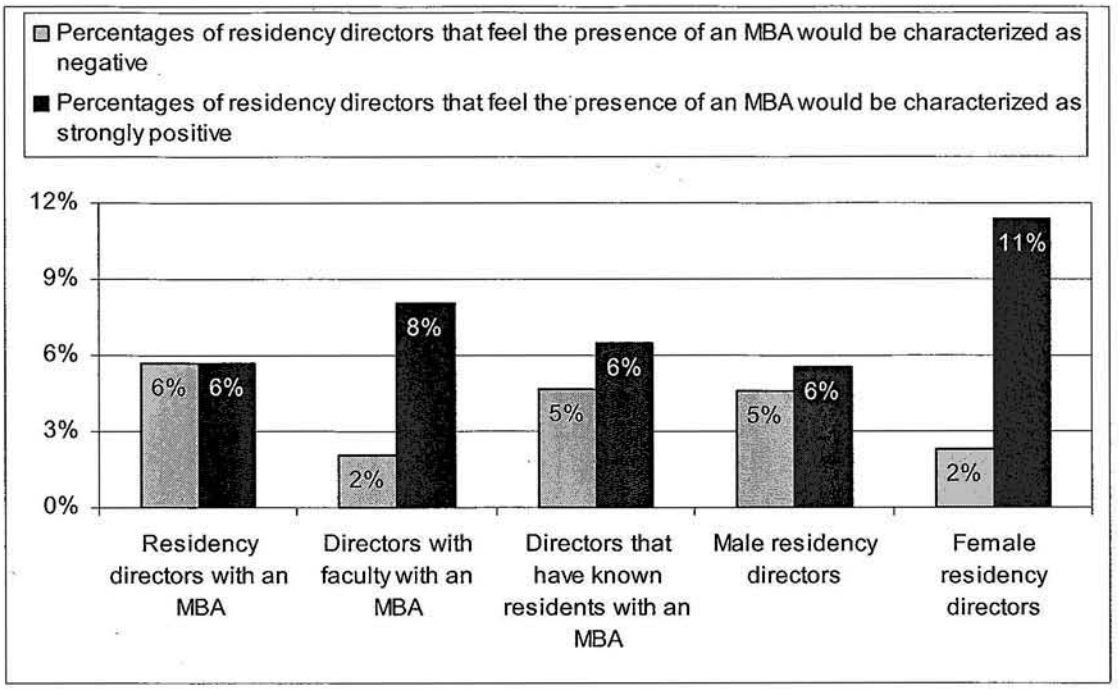
Of all the strongly positive responses radiology had the most with 44% (7/16) and general surgery had the least with 6% (1/16). Of all the negative responses including somewhat negative and strongly negative, general surgery had the most with 40% (4/10) and internal medicine had the least with 10% (1/10).

The data from all four specialties was combined and then broken down into the various demographic categories based on whether or not the director had an MBA, whether or not they knew any residents with MBAs in their program, and whether or not there were any faculty members with MBAs in their respective departments. The data was also broken out for gender as well. Then the means of all the scores were measured and presented below:



95% Confidence Intervals for resoponses in question # 1				
Residency directors with an MBA	2.53	+/-	0.30	(2.23, 2.83)
Directors with faculty with an MBA	2.34	+/-	0.16	(2.17, 2.50)
Directors that have known residents with an MBA	2.48	+/-	0.17	(2.31, 2.65)
Male residency directors	2.47	+/-	0.12	(2.35, 2.60)
Female residency directors	2.26	+/-	0.25	(2.02, 2.51)

Residency directors with an MBA had the highest overall mean of 2.53 (C.I. 2.23, 2.83) or the least positive which was contrasted with female residency directors which had a mean of 2.26 (C.I. 2.02, 2.51) or on average the most positive. This data was then sorted to isolate the directors from the various demographic groups that felt that the presence of an MBA was negative, which includes strongly negative responses and somewhat negative responses, and positive responses. For question number one the demographic data along with the percentages of whether the presence of an MBA was negative or strongly positive are presented on the graph below:



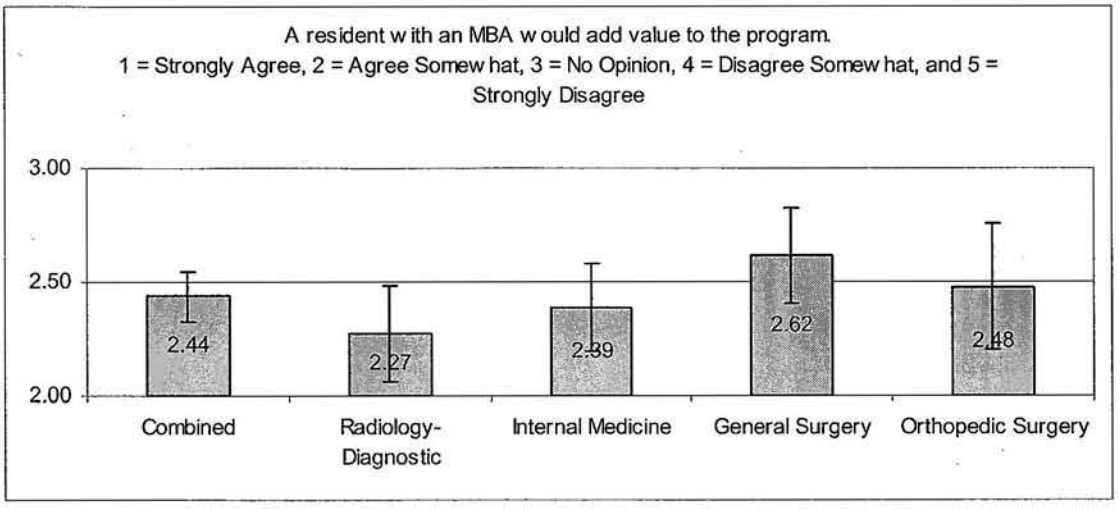
Negative effect		/ n
Residency directors with an MBA	6%	2 / 35
Directors with faculty with an MBA	2%	2 / 99
Directors that have known residents with an MBA	5%	5 / 108
Male residency directors	5%	9 / 198
Female residency directors	2%	1 / 44

Strongly positive effect		/ n
Residency directors with an MBA	6%	2 / 35
Directors with faculty with an MBA	8%	8 / 99
Directors that have known residents with an MBA	6%	7 / 108
Male residency directors	6%	11 / 198
Female residency directors	11%	5 / 44

The demographic group of female directors had the highest percentage of strongly positive responses with 11% (5/44) as well as one of the lowest negative response percentages with only 2% (1/44) along with directors with faculty that have an MBA which also had a negative response rate of 2% (2/99). Residency directors with MBAs had the highest percentage of negative response rates of 6% (2/35) combined with the lowest strongly positive response rate of only %6 (2/35).

Question # 2:

The second question in the survey (fig. 1) asked program directors to comment on the statement: a resident with an MBA would add value to the program. Directors were asked to respond with the numbers 1 through 5 where 1 = Strongly Agree, 2 = Agree Somewhat, 3 = No Opinion, 4 = Disagree Somewhat, and 5 = Strongly Disagree. The following graph displays the mean scores of all specialties combined and then individually:

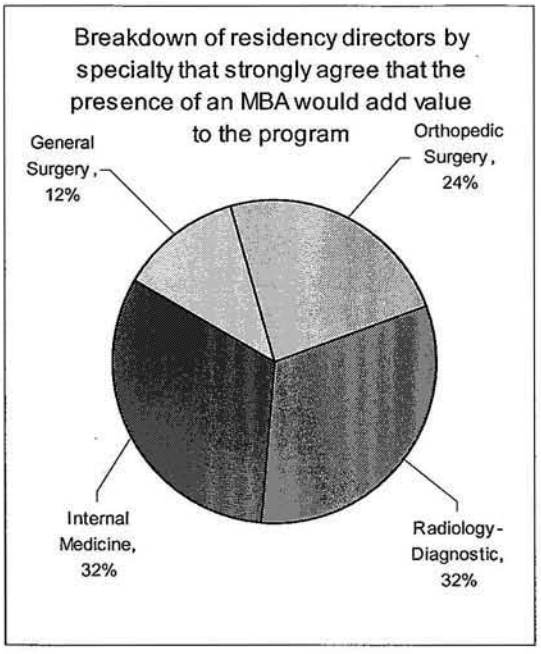


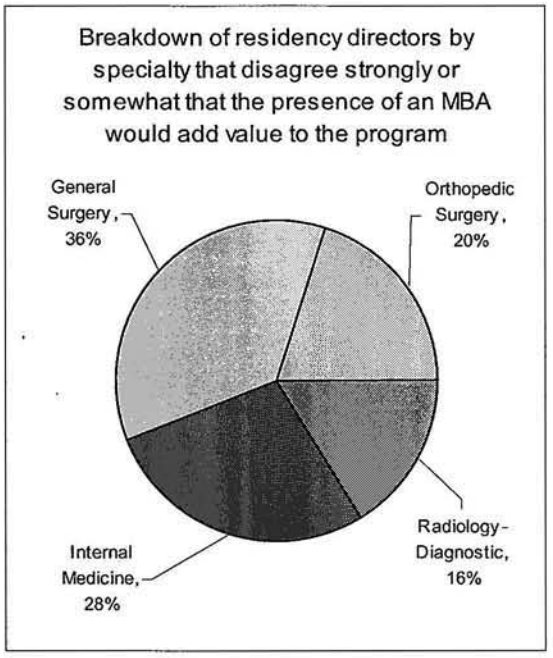
95% Confidence Intervals for resoponses in question # 2				
Combined:	2.44	+/-	0.11	(2.33, 2.54)
Radiology-Diagnostic:	2.27	+/-	0.21	(2.06, 2.48)
Internal Medicine:	2.39	+/-	0.19	(2.20, 2.58)
General Surgery:	2.62	+/-	0.21	(2.41, 2.82)
Orthopedic Surgery:	2.48	+/-	0.27	(2.20, 2.75)

Radiology had the most agreeable combined responses with the lowest mean score of 2.27 (C.I. 2.06, 2.48) while general surgery directors agreed with this statement the least with the highest mean score of 2.62 (C.I. 2.41, 2.82).

There were 25 responses stating they agreed strongly that an MBA would add value to their program and 25 responses of disagree somewhat or disagree strongly that a

resident with an MBA would add value to their program. The breakdown of these responses by specialty is as follows:



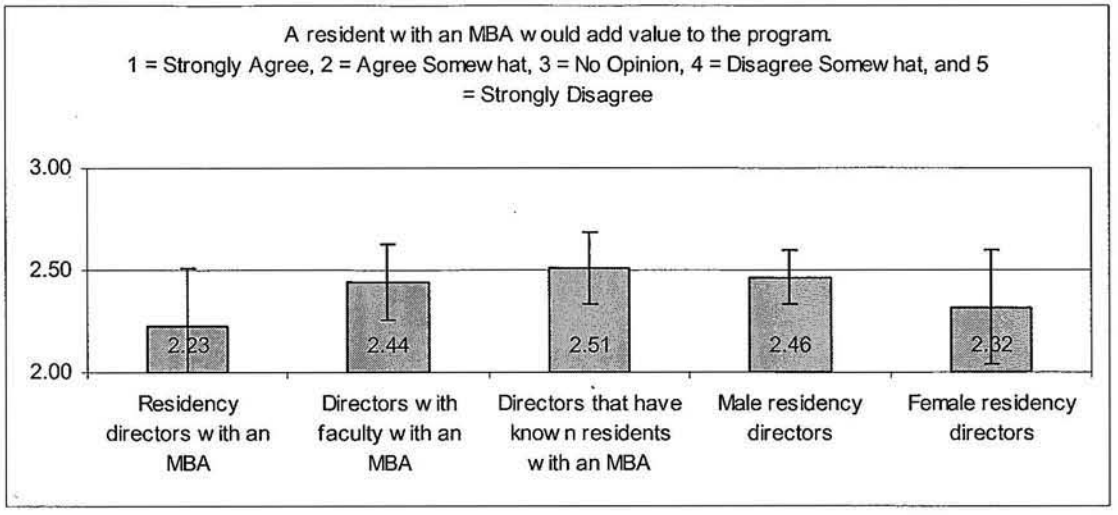


Source data for percentages		n = 25
Radiology-Diagnostic	32%	8 / 25
Internal Medicine	32%	8 / 25
General Surgery	12%	3 / 25
Orthopedic Surgery	24%	6 / 25

Source data for percentages		n = 25
Radiology-Diagnostic	16%	4 / 25
Internal Medicine	28%	7 / 25
General Surgery	36%	9 / 25
Orthopedic Surgery	20%	5 / 25

As noted in the graph general surgery has the lowest percentage of the strongly agreeable responses with only 12% (3/25) followed by orthopedic surgery with 24% (6/25). Internal medicine and radiology each made up 32% (8/25) of the directors that strongly agree that a resident with an MBA would add value to their respective programs. General surgery also had the highest percentage of directors that at least somewhat disagreed with the statement with 36% (9/25) while radiology had the least with 16% (4/25).

The responses to the second question were also adjusted for the demographics of the respondents and are presented on the graph below:

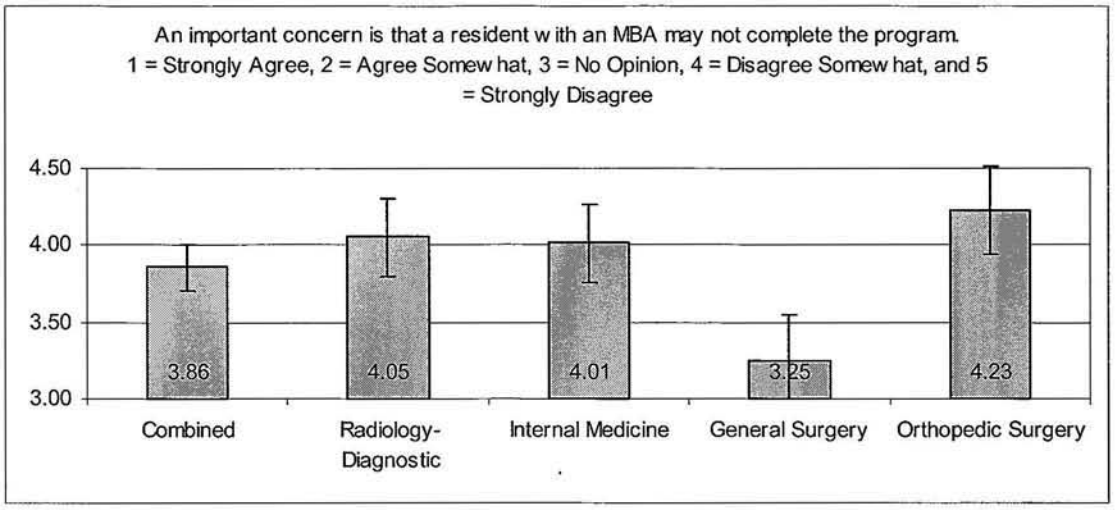


95% Confidence Intervals for resoponses in question # 2				
Residency directors with an MBA	2.23	+/-	0.28	(1.94, 2.51)
Directors with faculty with an MBA	2.44	+/-	0.19	(2.26, 2.63)
Directors that have known residents with an MBA	2.51	+/-	0.18	(2.33, 2.69)
Male residency directors	2.46	+/-	0.13	(2.33, 2.59)
Female residency directors	2.32	+/-	0.28	(2.04, 2.59)

As is noted in this graph residency directors that also had MBAs had the lowest mean of 2.23 (1.94, 251) or on average agreed the most that a resident with an MBA would add value to their program while directors that had known residents with MBAs agreed the least with a mean of 2.51 (C.I. 2.33, 2.59).

Question # 3:

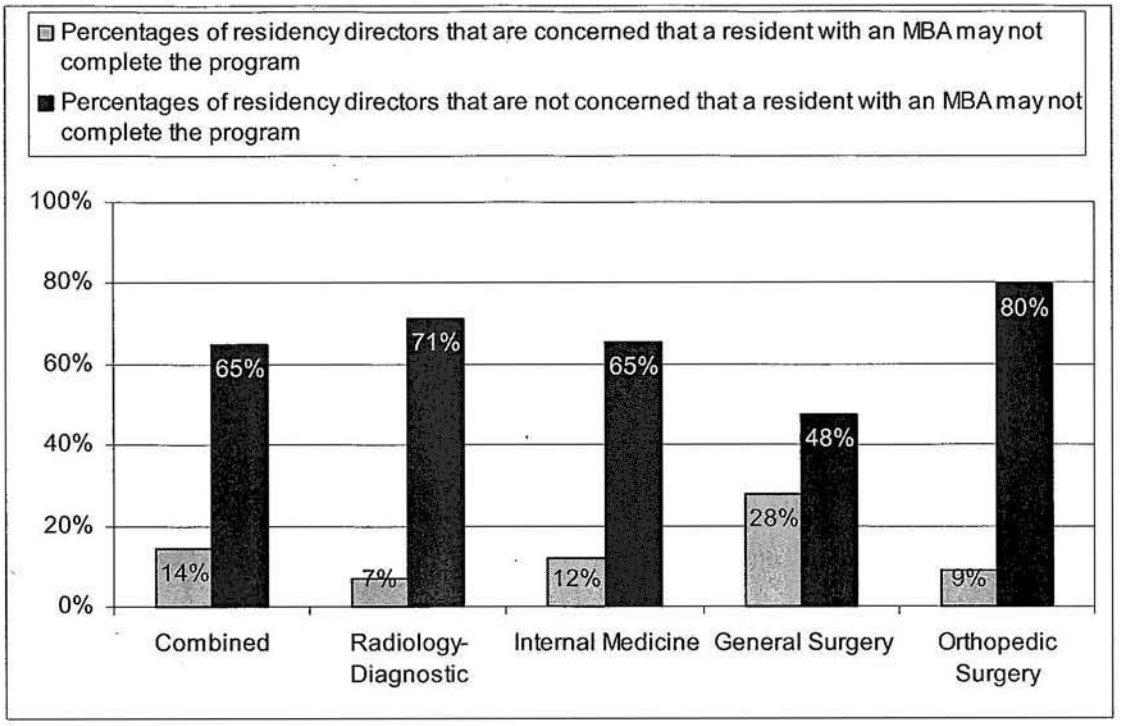
The third question in the survey (fig. 1) asked program directors to comment on the statement: an important concern is that a resident with an MBA may not complete the program. Directors were asked to respond with the numbers 1 through 5 where 1 = Strongly Agree, 2 = Agree Somewhat, 3 = No Opinion, 4 = Disagree Somewhat, and 5 = Strongly Disagree. The following graph displays the mean scores of all specialties combined and then individually:



95% Confidence Intervals for resoponses in question # 3				
Combined:	3.86	+/-	0.15	(3.71, 4.00)
Radiology-Diagnostic:	4.05	+/-	0.26	(3.79, 4.31)
Internal Medicine:	4.01	+/-	0.26	(3.76, 4.27)
General Surgery:	3.25	+/-	0.31	(2.94, 3.55)
Orthopedic Surgery:	4.23	+/-	0.29	(3.94, 4.52)

Orthopedic surgery on average disagreed the most that a concern is that a resident may not complete the program and had the highest mean response of 4.23 (C.I. 3.94, 4.52). This was followed by radiology with a mean of 4.05 (C.I. 3.79, 4.31), internal medicine with a mean of 4.01 (C.I. 3.76, 4.27) and then finally general surgery on average disagreed the least with the lowest mean response of 3.25 (C.I. 2.94, 3.55).

These responses were broken down into two categories. First are the program directors that either strongly agreed or somewhat agreed and the second are the program directors that either strongly disagreed or somewhat disagreed with the statement that a concern is that a resident with an MBA may not complete the program. The results are presented in the graph below:

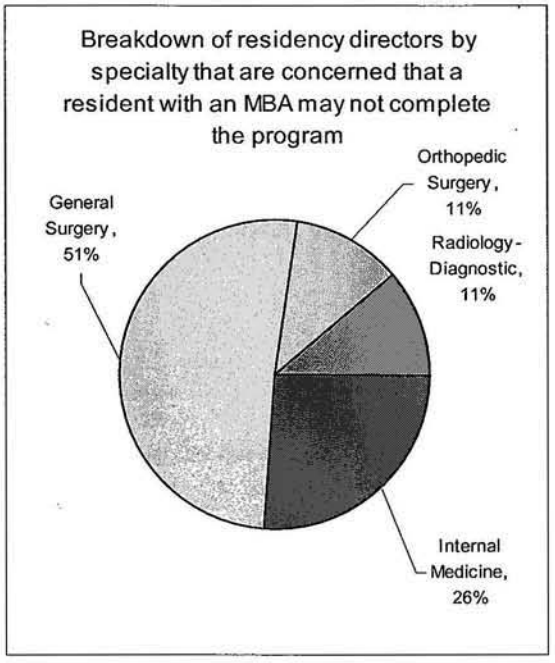


Directors that are concerned	/ n	
Combined	14%	35 / 243
Radiology-Diagnostic	7%	4 / 59
Internal Medicine	12%	9 / 75
General Surgery	28%	18 / 65
Orthopedic Surgery	9%	4 / 44

Directors that are not concerned	/ n	
Combined	65%	157 / 243
Radiology-Diagnostic	71%	42 / 59
Internal Medicine	65%	49 / 75
General Surgery	48%	31 / 65
Orthopedic Surgery	80%	35 / 44

General surgery directors were most concerned with 28% (18/65) of the respondents at least stating that they somewhat agreed with the statement, while radiology directors were least concerned with only 7% (4/59) of directors stating that they agreed that it is a concern that a resident with an MBA may not complete the program. General surgery also had the lowest percentage of directors that disagreed with the statement with 48% (31/65), while orthopedic surgery, the other surgical specialty, had the highest percentage of directors that disagreed that a concern is that a resident with an MBA may not complete the program.

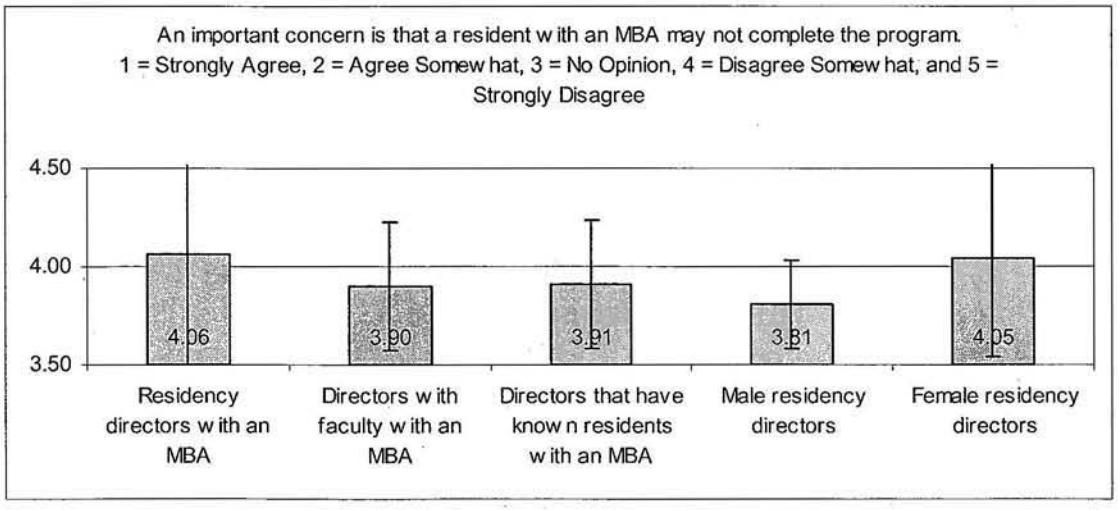
There were 35 program directors that indicated they either strongly agreed or somewhat agreed that a concern is that a resident with an MBA may not complete their residency training. These responses are broken out by specialty in the following chart:



Source data for percentages		n = 35
Radiology-Diagnostic	11%	4 / 35
Internal Medicine	26%	9 / 35
General Surgery	51%	18 / 35
Orthopedic Surgery	11%	4 / 35

From the chart general surgery makes up the largest percentage of residency directors with 51% (18/35) stating they agreed at least somewhat with the statement that they are concerned that a resident may not complete the program while radiology and orthopedic surgery make up the least each with 11% (4/35).

The responses to the third question were also adjusted for the demographics of the respondents and are presented on the graph below:

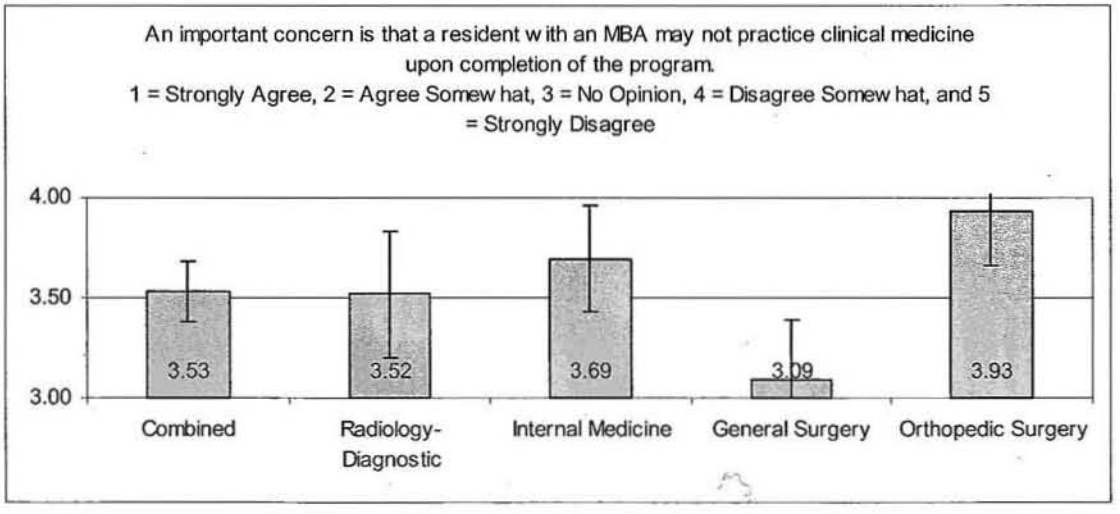


95% Confidence Intervals for resoponses in question # 3				
Residency directors with an MBA	4.06	+/-	0.58	(3.48, 4.63)
Directors with faculty with an MBA	3.90	+/-	0.33	(3.57, 4.23)
Directors that have known residents with an MBA	3.91	+/-	0.33	(3.58, 4.23)
Male residency directors	3.81	+/-	0.23	(3.58, 4.04)
Female residency directors	4.05	+/-	0.50	(3.54, 4.55)

From the graph above residency directors with an MBA on average disagreed the most with a mean response of 4.06 (C.I. 3.48, 4.63) followed by the demographic groups of female directors, directors that have known residents with an MBA, directors that have faculty with an MBA, and male residency directors with means of 4.05 (C.I. 3.54, 4.55), 3.91 (C.I. 3.58, 4.04), 3.90 (C.I. 3.57, 4.23), and 3.81 (C.I. 3.58, 4.04) respectively.

Question # 4:

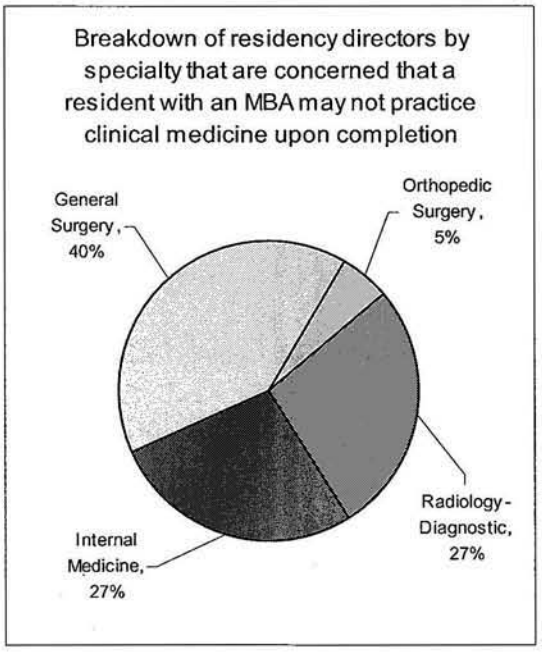
The fourth question in the survey (fig. 1) asked program directors to comment on the statement: An important concern is that a resident with an MBA may not practice clinical medicine upon completion of the program. Directors were asked to respond with the numbers 1 through 5 where 1 = Strongly Agree, 2 = Agree Somewhat, 3 = No Opinion, 4 = Disagree Somewhat, and 5 = Strongly Disagree. The following graph displays the mean scores of all specialties combined and then individually:



95% Confidence Intervals for resoponses in question # 4				
Combined:	3.53	+/-	0.15	(3.38, 3.68)
Radiology-Diagnostic:	3.52	+/-	0.32	(3.20, 3.83)
Internal Medicine:	3.69	+/-	0.27	(3.43, 3.96)
General Surgery:	3.09	+/-	0.29	(2.80, 3.39)
Orthopedic Surgery:	3.93	+/-	0.27	(3.66, 4.21)

Orthopedic surgery on average disagreed the most that a concern is that a resident may not practice clinical medicine and had the highest mean response of 3.93 (C.I. 3.66, 4.21). This was followed by internal medicine with a mean of 3.69 (C.I. 3.43, 3.96), radiology with a mean of 3.53 (C.I. 3.38, 3.68) and then finally general surgery on average disagreed the least with the lowest mean response of 3.09 (C.I. 2.80, 3.39).

Out of the 242 responses to this question 23% (55/242) of the program directors stated that they either agreed somewhat or agree strongly that they were concerned that a resident may not practice clinical medicine after residency. These responses are broken out by specialty on the chart below:

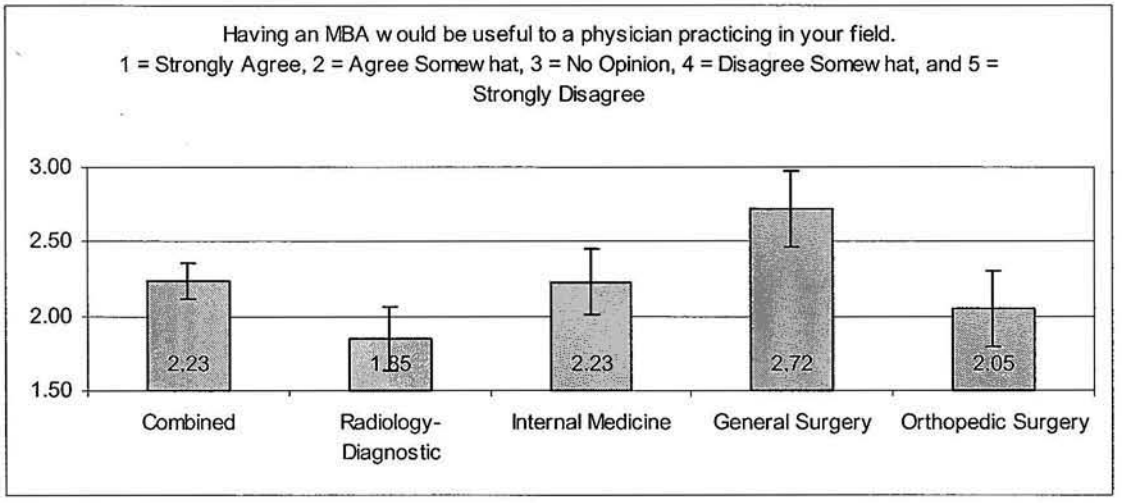


Source data for percentages		n = 55
Radiology-Diagnostic	27%	15 / 55
Internal Medicine	27%	15 / 55
General Surgery	40%	22 / 55
Orthopedic Surgery	5%	3 / 55

There were 55 responses that agreed at least somewhat with the statement in question number four. Of these general surgery had the most with 40% (22/55) of the directors stating they agreed at least somewhat and orthopedic surgery had the least with 5% (3/55).

Question #5:

The fifth question in the survey (fig. 1) asked program directors to comment on the statement: having an MBA would be useful to a physician practicing in your field. Directors were asked to respond with the numbers 1 through 5 where 1 = Strongly Agree, 2 = Agree Somewhat, 3 = No Opinion, 4 = Disagree Somewhat, and 5 = Strongly Disagree. The following graph displays the mean scores of all specialties combined and then individually:

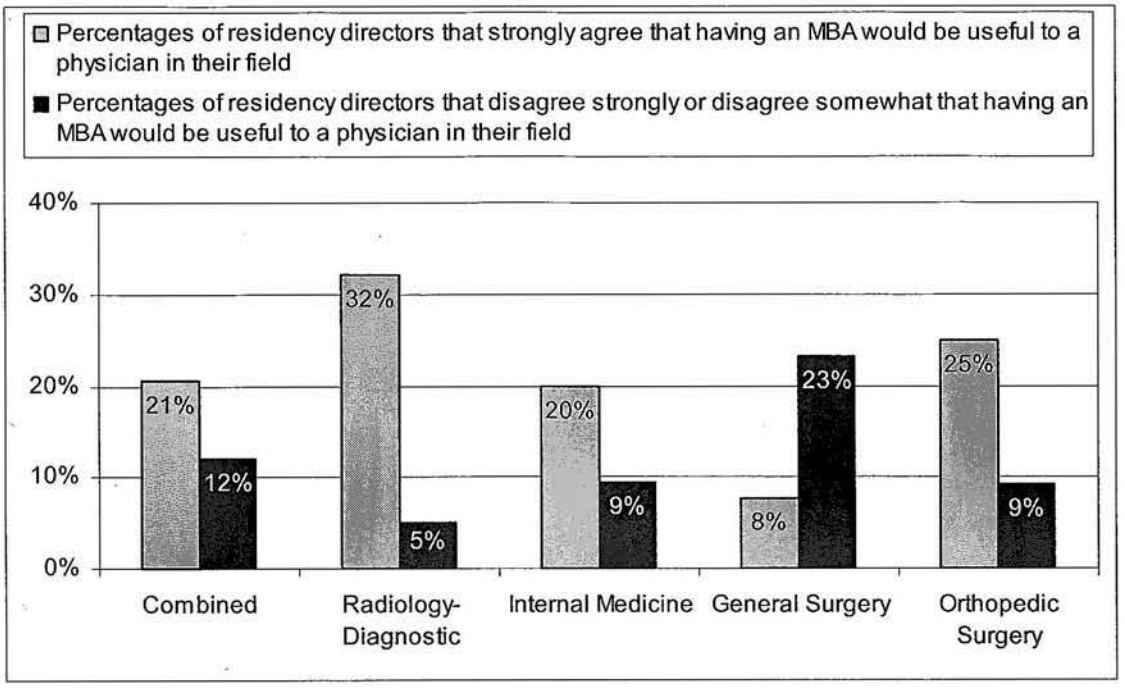


95% Confidence Intervals for resoponses in question # 5				
Combined:	2.23	+/-	0.12	(2.11, 2.36)
Radiology-Diagnostic:	1.85	+/-	0.22	(1.63, 2.06)
Internal Medicine:	2.23	+/-	0.22	(2.01, 2.45)
General Surgery:	2.72	+/-	0.25	(2.47, 2.98)
Orthopedic Surgery:	2.05	+/-	0.25	(1.79, 2.30)

Radiology on average was the most agreeable with this statement and had the lowest mean 1.85 (C.I. 1.63, 2.06) while general surgery directors were the least agreeable with the statement that an MBA would be useful to a physician practicing in their field with a mean of 2.72 (C.I. 2.47, 2.98).

The responses to this question were then broken down to isolate the percentages of directors in each specialty that disagree strongly or disagree somewhat as well as the

percentages of directors that agree strongly that having an MBA would be useful to a physician practicing in their field. The results are presented in the graph below:

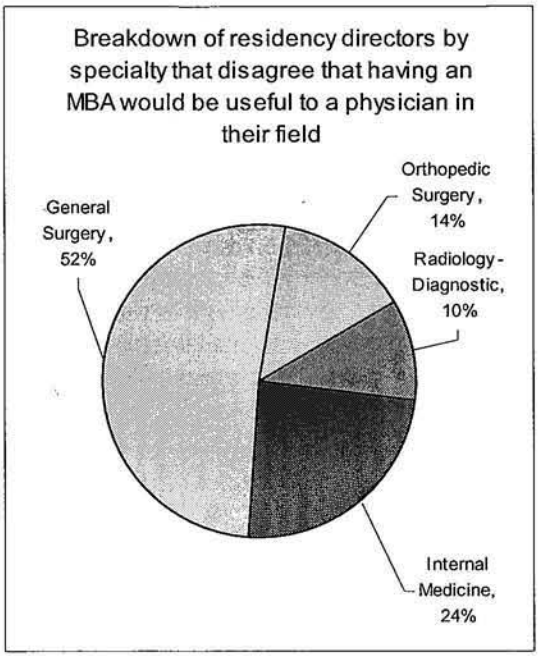


Directors that agree		/ n
Combined	21%	50 / 243
Radiology-Diagnostic	32%	19 / 59
Internal Medicine	20%	15 / 75
General Surgery	8%	5 / 65
Orthopedic Surgery	25%	11 / 44

Directors that disagree		/ n
Combined	12%	29 / 243
Radiology-Diagnostic	5%	3 / 59
Internal Medicine	9%	7 / 75
General Surgery	23%	15 / 65
Orthopedic Surgery	9%	4 / 44

Radiology had the highest percentage of directors with 32% (19/59) stating that they strongly agree with the statement that having an MBA would be useful to a physician practicing in their field followed by orthopedic surgery, internal medicine, and general surgery with 25% (11/44), 20% (15/75), and 8% (5/65) respectively. General surgery also had the highest percentage with 23% (15/65) of all general surgery program directors stating that they at least disagreed somewhat that having an MBA would be useful to a physician practicing in their field while radiology had the least with 5% (3/59) of responding radiology program directors stating that they disagreed at least somewhat

with the statement listed in question number five. The 29 respondents stating that they at least disagreed somewhat were broken down by specialty and presented in the graph below:

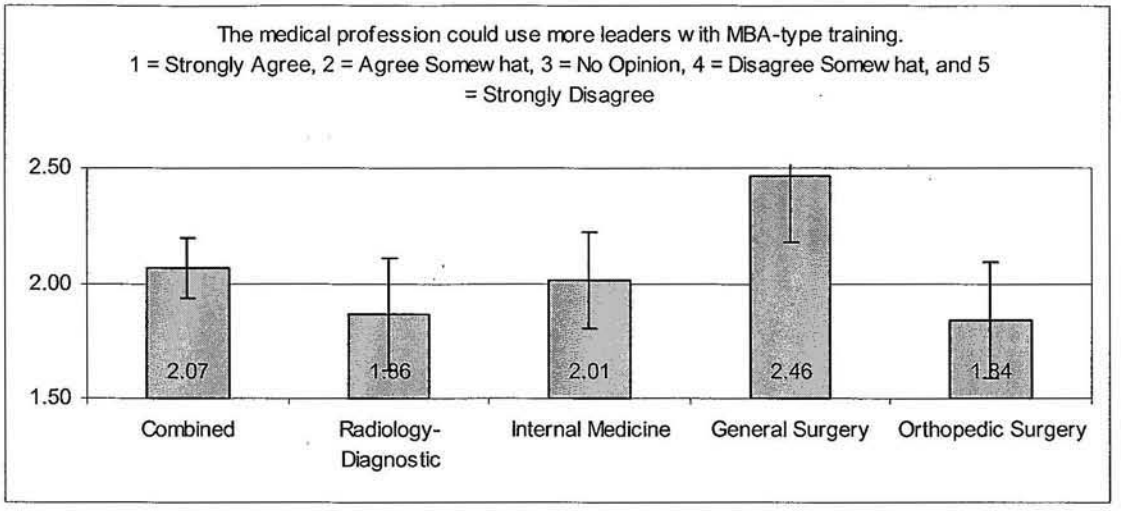


Source data for percentages		n = 29
Radiology-Diagnostic	10%	3 / 29
Internal Medicine	24%	7 / 29
General Surgery	52%	15 / 29
Orthopedic Surgery	14%	4 / 29

General Surgery had the highest percentages of respondents stating they disagreed at least somewhat with the statement with 52% (15/29) while radiology made up the least with 10% (3/29).

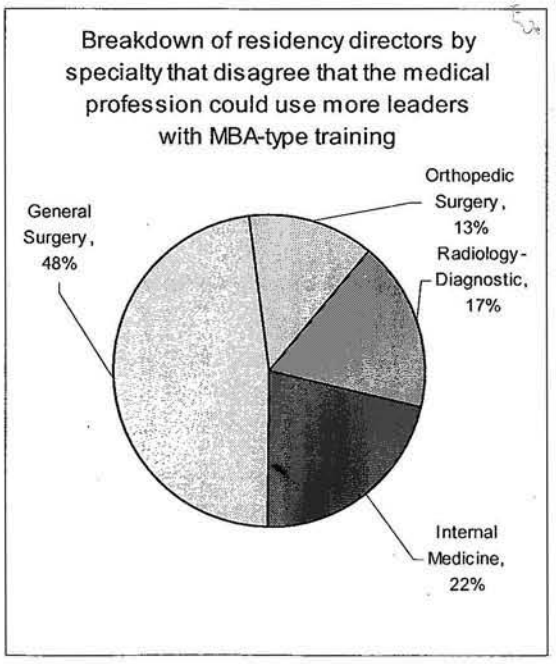
Question # 6:

The last question, question number six (fig 1), asked program directors to comment on the statement: the medical profession could use more leaders with MBA-type training. Directors were asked to respond with the numbers 1 through 5 where 1 = Strongly Agree, 2 = Agree Somewhat, 3 = No Opinion, 4 = Disagree Somewhat, and 5 = Strongly Disagree. The following graph displays the mean scores of all specialties combined and then individually:



95% Confidence Intervals for resoponses in question # 6				
Combined:	2.07	+/-	0.13	(1.94, 2.19)
Radiology-Diagnostic:	1.86	+/-	0.24	(1.62, 2.11)
Internal Medicine:	2.01	+/-	0.21	(1.81, 2.22)
General Surgery:	2.46	+/-	0.28	(2.18, 2.74)
Orthopedic Surgery:	1.84	+/-	0.25	(1.59, 2.10)

General surgery program directors agreed with this statement the least making up the highest mean of 2.46 (2.18, 2.74) while orthopedic surgery had the lowest mean of 184 (C.I. 1.59, 2.10) followed by radiology with 1.86 (C.I. 1.62, 2.11) and internal medicine with a mean of 2.01 (1.81, 2.22).



These results revealed 23 responses stating they either disagreed somewhat or disagreed strongly with the statement in question number six. These results were broken out by specialty and presented in the pie chart:

Source data for percentages		n = 23
Radiology-Diagnostic	17%	4 / 23
Internal Medicine	22%	5 / 23
General Surgery	48%	11 / 23
Orthopedic Surgery	13%	3 / 23

Of all the responses of strongly disagree and somewhat disagree that the medical profession could use more leaders with MBA training, general surgery made up the largest percentage with 48% (11/23) while orthopedic surgery made up the smallest percentage with only 13% (3/23).

Discussion/Conclusion:

The results in this thesis clearly show that medical students applying to residency with an MD/MBA will indeed have a slight advantage over their MD only counterparts. However, even though on average there appears to be a positive benefit to completing an MBA while in medical school there is a minority of directors in all four specialties that view the MBA as a negative.

With the problems of modern medicine growing beyond the science of medicine the need for physician leaders with expertise in business becomes apparent. As medical schools and students respond to this need there is a growing population of medical students studying business while in medical school. Most of these students will also seek the clinical training that is offered in formal residency programs to become a physician. Many of these students have begun to question whether this extra degree will help or hinder their ability to gain placement into clinical residency training programs. To answer this question this thesis utilized the survey method of gathering data on the opinions and attitudes of residency directors toward students applying to there respective programs with an MBA.

Other methods of testing the hypothesis were considered, such as using previous acceptance rates of those candidates with MBAs. It was established that attempting to gain historical figures on numbers of MD/MBA applicants compared to numbers accepted was problematic for a number of reasons. First, even though this would likely yield the most accurate results there was much skepticism over whether or not programs would release such information. Secondly, this increase in the numbers of MD/MBA

joint degree candidates is a more recent phenomenon and to try and use a few years of past data may not yield enough data points to confidently test the hypothesis.

This survey method also offers the ability to question possible motives for a particular bias as well as the ability for the respondent director to make personal comments concerning a unique situation. While the ease and flexibility of conducting a survey based study are definite advantages, there are many potential disadvantages as well. For example the completion of the survey is strictly voluntary and those that choose to respond may not accurately represent the entirety of the study group. Some respondents might be motivated to respond based on a strong opinion concerning the subject matter such as those directors with MBAs themselves. Residency directors with an MBA might be more likely to respond and subsequently to respond with a positive bias. Other directors might have had a particularly bad experience either with a faculty member with an MBA or a resident with an MBA and thus might be motivated to respond at a higher rate and respond negatively in the survey. Other potential concerns were that some of the directors, for a myriad of reasons, might have other people complete the survey instead of doing it themselves. Overall it was decided that even considering all the possible problems that could arise with a survey based study this was still the best way to test the hypothesis.

Another consideration was the selection of the specialties to be surveyed. Ultimately internal medicine and radiology made up enough programs to suffice as the non-surgical specialties and general surgery and orthopedic surgery comprised enough to serve as the surgical specialties. These four specialties provide enough programs that are evenly distributed across the US and surrounding areas to prevent a geographical bias and

by choosing two surgical and two non-surgical specialties the results of this thesis should be germane to medical students across the country and with different clinical interests. However, even though there were a total of 956 programs some of them did not have email address posted on the FREIDA website. Therefore only 176 radiology-diagnostic programs, 321 internal medicine programs, 218 general surgery programs, and 137 orthopedic surgery programs for a total of 852 residency programs that had valid email addresses were available to participate in this survey based thesis.

One concern was that the timing of this survey based thesis might be problematic since the months of December and January are often very busy months of the year in terms of working on interviewing and selecting medical student applicants to accept into their programs. It was decided that even though the directors may be busy they would most likely be checking email at this time and would be in the mode of evaluating candidates which is what this survey based thesis revolved around.

Another issue arose during the survey form design phase in that there was no valid source of data on why residency programs may or may not have reservations concerning applicants with other advanced degrees. Therefore the issue of completion and dedication to clinical practice were chosen anecdotally and the decision was made to test their validity with this study.

To gain a better understanding of the results some demographic data concerning the respondent directors was necessary. The first two demographic groups isolated were male and female residency directors. Of particular interest is the small percentage of female orthopedic respondents with only a 2% (1/44) response rate while female radiology program directors made up 32% (18/57) of all radiology program director

respondents. This could likely be due to a much smaller percentage of female program directors in the field of orthopedic surgery compared to the other specialties. The other surgical specialty, general surgery, made up the second smallest percentage of females with only 12% (8/65) of general surgery program director respondents. This is an interesting finding that likely needs further exploring but is beyond the scope of this thesis. For purposes of this study it is just notable that the subsequent data presented in this paper will be sourced from this gender make up.

The other demographic groups revolve around directors with MBAs themselves and exposure to either faculty with MBAs or residents with MBAs. Radiology had the highest percentage of program directors with MBAs with 20% (12/59). This might account for the higher response rate among radiology directors except that orthopedic surgery had only 9% (4/44) of directors indicating they had an MBA but had a response rate of 32% (44/137) which is near the response rate of radiology. General surgery had the highest percentage of directors that had faculty in their department with an MBA with 53% (31/59) while the other surgical specialty orthopedic surgery had the lowest with 20% (9/44). There were many comments on the returned surveys relating an MBA with career development as a physician. Particularly comments such as "radiology is now a business requiring MBA skills for chairs" and "it would benefit individuals who want to stay in academics and aspire to be a chair someday" reveal the sentiment that an MBA may be seen as helpful if not necessary for career advancement. Program directors that had known residents in their respective programs made up another demographic group. Radiology program directors had the highest percentage with 53% (34/64) while orthopedic surgery had the lowest percentage with only 34% (15/44) directors indicating

they had known residents with MBAs in their respective programs. This demographic group with exposure to residents with MBAs produced some of the more enthusiastic comments such as "the one we have has been evaluated to be the laziest resident they know" revealing a likely reason for a potential bias toward future MD/MBA applicants.

The response rate was fairly consistent between the four specialties with radiology program directors responding at the highest rate of 34% (59/176) and internal medicine program directors responding at the lowest rate of 24% (76/321).

The first question revealed an error in the design of the survey form. There were 26 program directors that even though they took the time to complete the survey, had left question number one blank. This is likely due to the fact that question number one had a slightly different scale than the remaining five and even though the entire survey was on one page this question was somewhat separated from the other five. This was done in an attempt to gain as much information as possible in as little time as possible and having the scale of 1 through 5 where 1 was the most positive and 5 was the most negative seemed the best way to achieve this goal. This scale was different from the others in that the others gave a statement and asked the program directors to answer 1 through 5 but 1 was agree strongly and 5 was disagree strongly. Some directors, 26 to be exact, must have either passed this question by or did not understand that it was to be the first question on the survey form.

There were still 218 responses to this very important question on the survey and these responses revealed that regardless of the individual specialty and regardless of the demographic group the average response was that completing an MBA would have a positive effect on the student's application. Even after breaking down the data into the

demographic groups attained in the survey, the mean responses were similar with no particular group indicating that a medical student with an MBA would be perceived as less desirable than his/her MD only counterpart. It would seem that on average applying with an MD/MBA would be advantageous and the extra degree is a positive attribute when applying to residency training according to this study. This finding therefore helps to answer the hypothesis in that the MBA does indeed impact a residency director's decision on an applicant and that the impact is positive. Hopefully by reviewing the responses to the rest of the survey one can become familiar with some possible reasons as to why this impact is positive more than negative and which particular demographic groups have a higher or lesser opinion of the joint degree.

This first question revealed that 13% (7/54) of all radiology directors indicated that they would characterize the presence of an MBA as strongly positive and all together had the lowest mean of 2.30 (C.I. 2.09, 2.51) giving the specialty radiology the most favorable opinion of applicants with MBAs. However general surgery program directors had the highest mean with 2.67 (C.I. 2.48, 2.87) meaning that these respondents on average had the least favorable opinion of medical students applying from MD/MBA programs. General surgery also had the lowest percentage of directors with only 2% (1/55) that would characterize the presence of an MBA as strongly positive. There were numerous comments supporting the lack of favorable opinions from general surgery program directors such as "Disinterest in surgery" pertaining to applicants with an MBA. Other comments like, "My program is a surgery residency. Motivation of the applicant to practice clinical surgery is very important. I would be uncertain of the motivation of an MD/MBA applicant." and "Perhaps surgery is not the best destination for people

pursuing non-clinical aspects of medicine." also give some insight into this negative bias that seems more prominent amongst general surgery program directors. Another interesting finding was that the demographic group residency directors with MBAs, had the least positive mean of 2.53 (C.I. 2.23, 2.83), the highest percentage of negative responses with 6% (2/35), and the lowest percentage of strongly positive responses with 6% (2/35). One can only speculate as to the reasons for this finding and hopefully this research can be expanded upon to help explain this anomaly. Judging only from this study it would also seem that while applying with an MBA would be advantageous to a student applying to residency, those applying to general surgery programs should be more prepared to explain reasons for acquiring the MBA and maybe even be proactive to address any concerns that the program and program director might have.

In question number two there is again a positive bias toward the joint degree applicants. It would seem that the majority of respondents on average felt that an applicant with an MBA would indeed add value to their program. Radiology had the most favorable overall response with the lowest mean of 2.27 (C.I. 2.06, 2.48) indicating that these program directors agreed more than the other specialties that a resident with an MBA would add value. General surgery had the highest mean of 2.62 (C.I. 2.41, 2.82) which even though this is the least favorable amongst the four specialties it is still on average agreeable with the statement. This question was intended to be ambiguous in terms of how or why these students would add value since the myriad of reasons would have made for a lengthy survey reducing the motivation for directors to take the time to complete and return the form. There were however, some interesting comments referring to residents adding value such as "Potential to get involved in hospital committees and

take active role in performance improvement and system based practice changes in program," and "MBA candidates are expected to understand better the complexities of our medical reimbursement and insurance system, as well as relationships with medical administrators and institutions sponsoring the training program," and also "teach business and leadership skills to other residents."

The third question addresses one of the major concerns mentioned in the comments section. This is the issue that a resident with an MBA may not complete the program. General surgery was the only specialty to have a mean less than 4 and substantially so with a mean of 3.25 (C.I. 2.94, 3.55) revealing the least disagreeable result to this concern. The data also reveals that 28% (18/65) of general surgery directors agreed at least somewhat that a concern is that a resident with an MBA might not complete the program. The next closest specialty to this percentage was internal medicine with 12% (9/75). The dramatic comments taken from the surveys best describe the reasons for this discrepancy such as "50% of our residents with MBAs have left the program," and "A higher percentage of graduates do not stay in academic medicine (e.g., consultant). This year, for example, one MBA resident has announced that he will not be completing his residency after completion of internship." While it would seem that this would be a concern for all specialties general surgery programs are clearly affected more than the others as is evident by the fact that even though general surgery makes up only 27% (65/244) of the respondent directors, they make up 51% (18/35) of those directors that are concerned that a resident with an MBA might not complete the program.

Question number four addresses the concern that residents with an MBA may not practice clinical medicine upon graduation. Here again we notice that general surgery is

an outlier with the means of all the other specialties being over 3.5 while general surgery is 3.09 (C.I. 2.80, 3.39) revealing that general surgery program directors on average disagree less than the other specialties with this statement. There were 55 directors overall that agreed at least somewhat that not practicing clinically was a concern and even though once again, that general surgery makes up only 27% (65/244) of all respondent directors, they make up 40% (22/55) of those that agree at least somewhat with this statement. This is in direct contrast to the other surgical specialty orthopedic surgery which had the highest mean of 3.93 (C.I. 3.66, 4.21) meaning that these directors disagreed the most that a concern is that a resident with an MBA may not practice clinically.

The next question assesses the opinions of the director's view that an MBA would be useful to a physician practicing in their particular field. It seems that most residency directors, at least according to this survey, agree that having an MBA would be useful. However once again general surgery had the least favorable overall response with a mean response of 2.72 (C.I. 2.47, 2.98) meaning that these directors agreed the least of all four specialties. 32% (19/59) of general surgery directors disagreed at least somewhat with the statement that an MBA would be useful to a physician practicing in their field. Again even though general surgery made up only 27% (65/244) of all respondents they make up 52% (15/29) of all directors that disagree at least somewhat with this statement.

Question number six had an overall response that was positive with the mean responses all coming in below three. This means that on average residency directors agree that the medical profession could use more leaders with MBA-type training. However, once again general surgery has the highest mean of 2.46 (C.I. 2.18, 2.74)

meaning that the general surgery directors were the least agreeable with this statement. The data also reveal that general surgery respondents make up 48% (22/23) of respondents that disagree at least somewhat with this statement.

Throughout this thesis there did seem to be a trend that the specialty of general surgery was less enthusiastic about residents with MBAs. Now hopefully that this trend has been discovered joint degree students with an interest in general surgery can plan on how to best approach this issue. One example of how to mitigate any potential bias is evident in the comment "The applicant has to present him or herself with a cogent plan that includes how the MBA would help them get to the career goals." By explaining the motivation behind pursuing the MBA and how the medical student hopes to utilize these skills in the future will hopefully alleviate most concerns that a program director might have. Also of note is that orthopedic surgery, the other surgical specialty, appeared to have a more favorable response to applicants with MBAs than did general surgery.

While the purpose of this thesis was to test the fore mentioned hypothesis the goal of this thesis was really to give future leaders in medicine that are contemplating pursuing an MBA while in medical school, a more complete picture of the landscape of post medical school clinical training options. This thesis is in no way designed or intended to persuade any medical student away from any specific clinical specialty and hopefully the overwhelming positive bias that has been unveiled is not overshadowed by some of the more entertaining comments quoted here. Most of the negative comments received seemed to be the result of a negative experience from exposure to a few select residents with MBAs. There were also many comments such as "Successfully completing an MBA indicates a level of academic ability and organizational skill that should make the

recipient an excellent resident" and "I perceive them as energetic, smart and interested in the future of medicine," that support the overwhelming positive attitude uncovered in this thesis. Hopefully this thesis will be used as a source for medical students considering alternative career paths to conventional practice. This thesis has successfully revealed that overall attaining an MBA will benefit any medical student dedicated to working at becoming a physician leader for the future of medicine.

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Figures: Fig. 1:

Survey:

Main question:
Please answer with the number 1 to 5 where: 1 = Strongly Positive / 2 = Somewhat Positive / 3 = None / 4 = Somewhat Negative / 5 = Strongly Negative

1. How would you characterize the effect of the presence of an MBA when assessing a medical student applying to your residency program?(Please select one of the following)

Please select 1, 2, 3, 4, or 5 _____

Statements of reasons to prefer or be concerned about an applicant with an MBA:
Please answer with the numbers 1 to 5 where: 1 = Strongly Agree, 2 = Agree Somewhat, 3 = No Opinion, 4 = Disagree Somewhat, and 5 = Strongly Disagree

2. A resident with an MBA would add value to the program.
Please select 1, 2, 3, 4, or 5 _____

3. An important concern is that a resident with an MBA may not complete the program.
Please select 1, 2, 3, 4, or 5 _____

4. An important concern is that a resident with an MBA may not practice clinical medicine upon completion of the program.
Please select 1, 2, 3, 4, or 5 _____

5. Having an MBA would be useful to a physician practicing in your field.
Please select 1, 2, 3, 4, or 5 _____

6. The medical profession could use more leaders with MBA-type training.
Please select 1, 2, 3, 4, or 5 _____

7. What other substantial consideration(s) do you see regarding an applicant with an MBA?

_____

_____

Yes/No and short answer questions:

8. In the time you have worked closely with the residency program has it had any residents with an MBA?
Choose Yes____ No____ If Yes how many? ____

9. Do you currently have an MBA?
Choose Yes____ No____

10. Do any faculty members in your department have an MBA?
Choose Yes____ No____ If Yes how many? ____

11. What is your age? ____ Please check whether you are Male____ Female____

Selected Quotes:

"We have come to a time where those that make decisions can not identify a patient in a well-lit room, with a map, magnifying glass and seeing-eye-dog."

"50% of our residents with MBAs have left the program"

"The one we have (resident with an MBA) has been evaluated to be the laziest resident they know"

"Too pragmatic and not "romantic" enough about saving humanity, serving the poor and unwashed, etc. on"

"I am personally very concerned about young men and women, without getting their hands dirty in the clinical arena for several years, wanting to become medical administrators directly. If I felt that was the intention, I would never accept them in my program. That is a hidden fear that many Program Directors harbor. We have no use for such theoretical arm chair quarterbacks. It would be a bit like the worthless folk who advised Hilary Clinton on her health care "reform" package which richly deserved the fate it met."

"What does an MBA bring to the table? Marketing? Accounting? Management? Finance? If I thought I needed those skills, I would go obtain an MBA. In many ways this is a big distraction to these people from the meet and potatoes of medicine. They tend to become confused because they are so interested in "big picture" items."

"Successfully completing an MBA indicates a level of academic ability and organizational skill that should make the recipient an excellent resident"

"Older age residents may contribute less to the social spirit of the residency training group."

"I would be suspicious that they would truly want to practice medicine. I would also have some concern if they would really be willing to put time/effort necessary into residency training."

"I am 62 and plan on getting my MBA soon. Our former chair, now Chief Medical Officer, and our chief of Surgery at the VA both have MBA degrees."

"I perceive them as energetic, smart and interested in the future of medicine."

"Perhaps it underscores more of a business rather than humanitarian interests in medicine and in being a physician."

"I find my residents with multiple degrees are sometimes less compliant with day-to-day administrative requirements of the program (procedure logs, HIPPA compliance modules) because they often feel entitled to decide for themselves which tasks are actually important. With 40 residents, it is difficult to tolerate 40 separate interpretations of department policies"

"My chairman and one of my partners acquired MBA's during a 5 year period of time at a university setting. The effect of the MBA was that both individuals withdrew from education, were obsessively concerned with non clinical matters and avoided clinical work altogether. One has left clinical care."

"Having an understanding of the business side of radiology and medicine would enhance any practice. This would likely have positive effects on income. These skills would obviously not make the person a better diagnostic radiologist."

"I see no reason why business acumen and compassionate medicine can not coexist. I view an MBA as an added and valuable dimension to the application."

"I worry that that type of physician may be an entrepreneur rather than dedicated to medicine."

"The applicant has to present him or herself with a cogent plan that includes how the MBA would help them get to the career goals."

"In our experience, residents with MBA's are more "financially oriented" than clinically oriented." They have not worked as hard as our other residents nor have they cared for their patients as well. Resident peers have in general viewed them as slackers."

"Would hopefully do important research and contribute to solving national problems that plague our specialty"

"Medicine is a 100 percent commitment. My concern is anyone with an MBA may not be 100% committed to the practice of medicine."

"Often distracted from primary duties on orthopedic related issues"