

A Medical Student Initiated Elective Course in Business and Finance: A Needs Analysis and Pilot

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Background: As the knowledge needed by physicians expands past basic science and patient care, students are calling for their medical school education to do the same. At Michigan State University College of Human Medicine, students addressed this concern by developing a pilot elective, Medical Business and Finance (MBF). The goal of this student-led elective was to provide a basic understanding of personal finance, student debt handling, business management, and insurance reimbursement issues.

Methods: A preliminary needs assessment was conducted to discern if students wanted medical business and finance supplementation to the medical school curriculum. Ninety percent of students reported interest in a business and finance elective. Once the course was instated, student satisfaction and knowledge-base in medical business and finance was analyzed through pre-elective, pre-session and post-elective surveys.

Results: Results were analyzed on forty-eight students' pre-survey and post-survey responses. After the course, self-assessed student knowledge regarding finance and business nearly doubled. The average pre-elective self-assessed knowledge of finance was 3.02 on a ten-point scale and knowledge of business was 2.61. This was compared to an average post-elective self-assessed knowledge of 5.75 and 5.44, respectively. Satisfaction in MSU CHM business and finance resources also slightly increased at the completion of the course. Nearly 85% of students felt they benefited from participating in the elective. Similarly, 85% felt that incoming students would also benefit from taking the course. Almost 30% of students believed the material covered in the MBF Elective should be in the required medical school curriculum.

Conclusion: A student led elective can be an effective way to introduce students to an array of topics related to medical business and finance. Students felt that their knowledge of these topics increased and they valued the addition of medical business and finance education to their curriculum. A student-led elective is one potential way for others to successfully incorporate these topics into medical school curricula across the country.

Keywords: curriculum reform; medical business; medical finance; student-led; course; elective; module; student debt.

INTRODUCTION

In 2013, it was estimated that the United States spent \$2.9 trillion on health care, and it was projected that by 2022 health care alone will account for 20% of the gross domestic product.¹ In contemporary medicine, physicians are expected to know about the political, social, and economic context of medicine to decrease wasteful spending and practice appropriate parsimonious care. All of these foci require some understanding of the business of medicine.²

With increasing costs of medical education, there is a strong need for well-informed, knowledgeable medical students who can make educated financial decisions.³⁻⁷ Additionally, it has become known that student debt influences residency and other career decisions.⁸⁻¹² With the rapid change in the landscape

of health care, it is critical to prepare students to be literate in business and finance topics relevant to their field. Understanding how a cooperative practice works and how to minimize overhead costs, or even simply understanding what overhead costs are, allows students to step into practice more easily. It is essential for students to have financial and business literacy allowing them to join changing health care policy conversations dominated by the business and finance of medicine.

Prior Work and Current Need

Typically content in business and finance is not in the required medical school curriculum. However, some colleges offer certificate or dual degree programs

Table 1. Preliminary needs assessment survey

#	Question	Question type
1	How much knowledge do you feel you have in medical FINANCES?	Scaled (1–10)
2	How much knowledge do you feel you have in medical BUSINESS?	Scaled (1–10)
3	How fearful are you of the amount of debt you will incur in your medical education?	Scaled (1–10)
4	Do you feel you could benefit from this type of elective?	Multiple choice
5	Would you consider taking this elective?	Multiple choice
6	How important would provided food be in your decision to attend a weekly lunch elective?	Scaled (1–5)
7	If you are interested, what other speakers/topics would you like to see a part of the elective?	Free response

in medicine and business, and it is thought that graduates of these programs will become the future decision-makers and policy leaders in healthcare.^{13–16} Additionally, some residencies incorporate financial training in their programs to prepare graduates for practice with similar goals in mind.^{17–22}

At Michigan State University (MSU) College of Human Medicine (CHM), elective courses can be designed and administered by students. This process provides students an active role in their own education through course design. It also provides students the opportunity to address content that is important to them.

This report describes the development of a medical business and finance course and investigates the student satisfaction of the course using pre- and post-session surveys.

METHODS

Needs Analysis

Students of the MSU CHM class of 2016 completed a seven question needs analysis in the spring of 2013 exploring student interest in a business and finance elective shown in Table 1. The needs analysis was con-

ducted via the MSU CHM listserv of approximately 200 first-year medical students. Students were asked a series of questions that included ranking level of interest in an elective that would address topics in medical business and finance. Of the 106 respondents, 90% reported interest in a business and finance elective.

Syllabus, Content, and Course Delivery

Based on the strong need identified in the needs assessment, the student leaders developed the inaugural elective, 'Medical Business and Finance' (MBF) (Table 2). For the purposes of this course, 'medical business' was defined as the administrative cooperation of all persons involved in medical practice and 'medical finance' focused on the monetary aspects of medical education and the profession. The goal of the elective was to provide an introduction to business and finance topics including, but not limited to, insurance, reimbursement, contracts, investments, and loans.

First, the course syllabus was written to set scaffolding for course goals and requirements. Course topics were selected based on student feedback from the preliminary needs assessment (Table 3). Next, advisors were selected and IT support staff was enlisted to

Table 2. Tasks in planning the MBF Elective

Task	Curricular planning item
1	Writing the course syllabus
2	Selecting course faculty advisors and student coordinators
3	Reserving rooms on both preclinical campuses
4	Setting up video conferencing and IT
5	Developing course topics
6	Securing speakers for each session
7	Acquiring course approval by administration
8	Providing speaker gifts and parking reimbursement
9	Creating pre-elective, postsession and postelective surveys
10	Finding food sponsors
11	Applying for funding for course expenditures

Table 3. Session topics of the MBF Elective

Session	Topic
1	Introduction: Business and Finance in Medicine
2	Credit Reports and Taxes
3	Debt Forgiveness
4	Hospital Contracts
5	Investing, ROTH IRAs, and Stocks
6	Medical Billing and Coding
7	Physician's Panel
8	Intra-office Cooperation in Private Practice
9	Life, Disability and Malpractice Insurances
10	Advocacy Training for Physicians and Patients
11	Final Discussion and Summary

manage simultaneous broadcasts between two MSU CHM campus sites, East Lansing and Grand Rapids, MI.

Course speakers were secured through faculty, student-leader connections, and support from local medical societies. Their expertise ranged from private business owners to practicing physicians (MSU and non-MSU faculty) to financial counselors. Care was taken to secure speakers who were experts in their field. Some were either practicing physicians with direct experience in medical business and finance while others had medical provider clients with whom they worked closely in the medical business and finance sectors.

Once a tentative schedule was established, the course was approved by the MSU CHM administration as a one-credit university elective (HM590). The MSU Institutional Review Board evaluated the study of this elective and deemed it exempt. In the fall of 2013, the MBF Elective was offered, and 63 first- and second-year medical students (including the three student leaders) were enrolled.

Curriculum Overview

The elective was scheduled once weekly over the lunch hour 12:00–12:50 PM for 10 consecutive weeks. There was also one evening panel of physicians for a total of 11 sessions. The lunch hour time slot allowed students to attend sessions after morning lectures while still remaining on time for afternoon labs or other activities. The presentations were delivered live at one campus and simultaneously broadcasted to the other. An attempt was made to distribute live speakers evenly between both the Grand Rapids and East Lansing campuses. These sessions began promptly at noon in order to assure full engagement with the guest speakers. Lunch was sponsored by our local Ingham County Medical Society and Kent County Medical Society during these sessions.

Class Description

Guest speakers were free to design their assigned 50-min session guided by pre-session questions provided by the students. Teaching and learning strategies ranged from informal question and answer sessions to prepared PowerPoint presentations and case presentations. Speakers typically brought support handouts to provide to students. Additionally, speakers were instructed not to promote their company or products to students. After the presenter finished, students asked questions and presenters were given thank you cards and small gift bags.

Course Evaluation

Students' self-assessed knowledge was measured via a SurveyMonkey® questionnaire before the first session of the elective (45 questions) and after the last session (32 questions). The survey administered during the first session was the same survey administered after the last session with some questions added or subtracted based on relevance to the course timeline. The survey consisted of questions regarding student demographic information, self-assessed medical business and finance knowledge, expected physician business and finance knowledge, and suggestions for course improvement.

After each session, students rated the quality of the presenter and content with a 10-question survey and provided questions for the next speaker. Questions were sent to the speaker in advance of their presentation to focus discussion around student interest and areas of inexperience.

Course Requirements

Students were required to take both pre- and post-elective surveys, attend and complete 80% of the elective sessions and postsession surveys, and be present at the final 'wrap-up' class. Students meeting these criteria earned one course credit hour. The three student leaders did not participate in course surveys.

RESULTS

Sixty-three students were originally enrolled in the course, including three student leaders. Six students did not give consent for their survey data to be released; six students withdrew from the course. Including the three student leaders, 15 students in total were excluded from analysis. Results were analyzed on 48 students' presurvey and postsurvey responses.

Figure 1 depicts what level of business and finance knowledge students thought practicing physicians ought to know as reported in the postelective survey.

Figure 2 compares students' pre- and postelective responses about medical business and finance. After the course, self-assessed student knowledge regarding finance and business nearly doubled. The average pre-elective self-assessed knowledge of finance was 3.02 on a 10-point scale and knowledge of business was 2.61. This was compared to an average postelective self-assessed knowledge of 5.75 and 5.44, respectively. Satisfaction in MSU CHM business and finance resources also slightly increased at the completion of the course, as did students' self-reported fear of debt from their medical education. The amount of knowledge

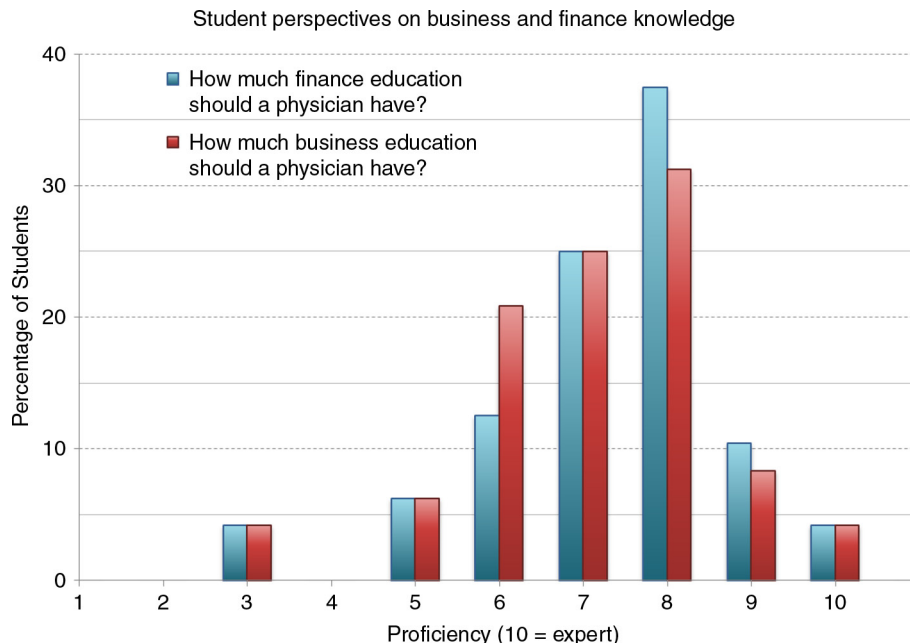


Figure 1. Students’ perspective on how much business (red) and finance (blue) knowledge practicing physicians’ should have (with 1 = ‘novice’ and 10 = ‘expert’). Data obtained from postelective survey. *N* = 48.

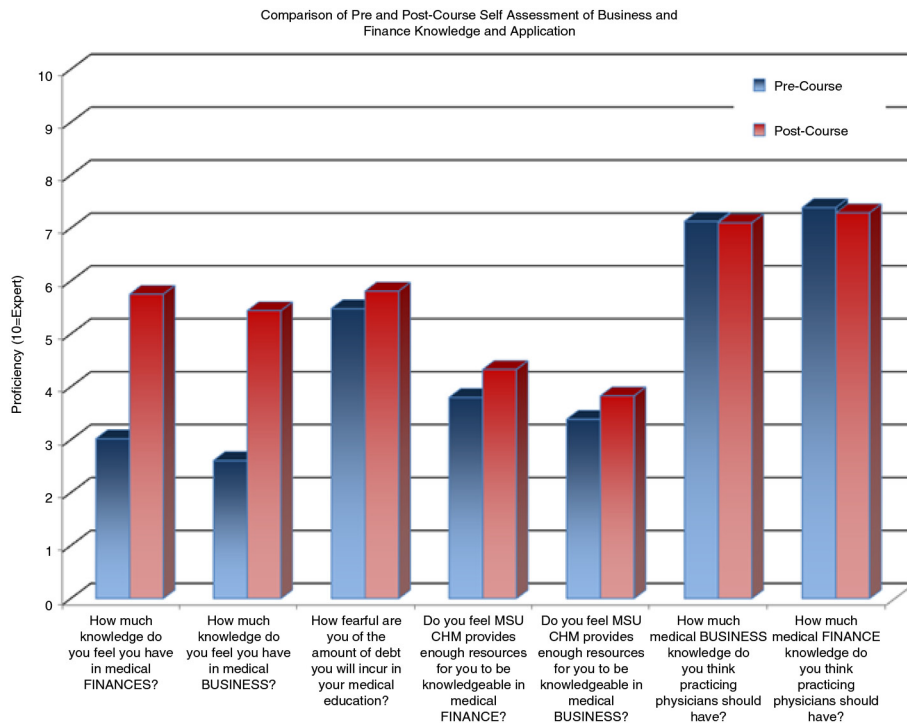


Figure 2. Students’ responses to pre- and postelective surveys (with 1 = ‘novice’ or ‘completely disagree’ and 10 = ‘expert’ or ‘completely agree’). Data obtained from pre-elective survey (red) and postelective survey (blue). *N* = 48.

students felt practicing physicians should have regarding business and finance was nearly identical before and after participating in the course.

Student Satisfaction

Students were asked about the perceived value of the MBF Elective. Nearly 85% of students felt they benefited from participating in the elective. Similarly, 85% felt that incoming students would also benefit from taking the course. Almost 30% of students believed the material covered in the MBF Elective should be in the required medical school curriculum.

DISCUSSION

Medical students are generally aware of the debt required to become a physician, but appreciating the impact of debt typically evolves over time.⁸⁻¹² As students progress through medical school, many realize they have questions and concerns about business and finance that the curriculum may not address. It has been documented that students worry about their debt load and that fear of debt, in some part, influences specialty decisions.^{11,12} Although not a significant increase, the results of the postelective survey suggest that students who took the elective became more concerned about the debt they were accumulating after the elective was completed.

The timing of the surveys may cause some bias in the survey results. It is possible that the fear of debt accumulation may again decrease over time after the students are no longer having weekly discussions about finance. To address this bias, it would be appropriate to resurvey the students at a later time to determine the longevity of their fear of debt accumulation.

Additionally, results demonstrate that the knowledge students seek can be provided effectively through a student-led initiative. After exposure to the 10-week MBF Elective, students' perceived knowledge almost doubled in both medical business and finance according to pre- and postelective surveys, as shown in Fig. 2.

There was a considerable gap between students' pre-elective self-assessed knowledge of finance (3.02/10) and expected physicians' knowledge (7.34/10). The gap also existed in business knowledge, 2.61/10 and 7.12/10, respectively. After the elective, students' knowledge base doubled in both business and finance, making their expectation of the level of knowledge they need to obtain as a physician a more attainable goal.

Recommendations

Although a student-led elective may be effective, this structure can also be difficult to maintain. One of the challenges of student-run electives is that the course leaders come and go, making sustainability difficult. Consistent faculty advisors may alleviate some of this problem and add some stability to the process. The student leaders of this pilot elective have found new leadership from rising second-year students and faculty leaders have stayed the same. The MBF Elective is currently being offered for its second year. Using the results from the postsession survey, the new leaders were able to discern which topics were favorable or unfavorable to students and alter the course schedule accordingly. For example, 'Hospital Contracts' and 'Investing, ROTH IRAs, and Stocks' were deemed the most useful topics and 'Intra-office Cooperation in Private Practice' and 'Final Discussion and Summary' were considered the least useful. Furthermore, presession survey results guided the new leaders to keep the same speakers or identify new ones for a favored topic.

As always, beginning course planning and preparation early every year is vital to have the elective run smoothly. The new leadership was selected well in advance of this year's iteration to allow ample time to begin working. Additionally, it is important to recognize that curriculum development will be influenced by the new student leaders' and faculty's community connections. These connections serve as the foundation for securing speakers and are a confounding variable in the topic selection. This may also produce variability in course preparation in other institutions.

Summary Statement

A student-led elective can be an effective way to introduce students to an array of topics related to medical business and finance. Students felt that their knowledge of these topics increased and they valued the addition of medical business and finance education to their curriculum. A student-led elective is one potential way for others to successfully incorporate these topics into medical school curricula across the country.

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