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Physician Executive Leadership: Assessing a Student-Led Approach to Healthcare Leadership Education in Medical School

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Physician Executive Leadership: Assessing a Student-Led Approach to Healthcare Leadership Education in Medical School

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Overview

The Problem: Gaps in Medical Education

Healthcare in the US continues to evolve, and topics such as health policy, health finance, and patient experience are now central to the practice of medicine.

However, the sheer volume of material students are required to learn in the preclinical years makes it challenging to introduce new subjects into traditional medical school curricula. As a result, these topics in healthcare leadership are often left out.¹ Indeed, only 40-50% of medical students report appropriate training in the "practice" of medicine, including subjects such as medical economics, healthcare systems, and managed care.²

A Proposed Solution: Physician Executive Leadership

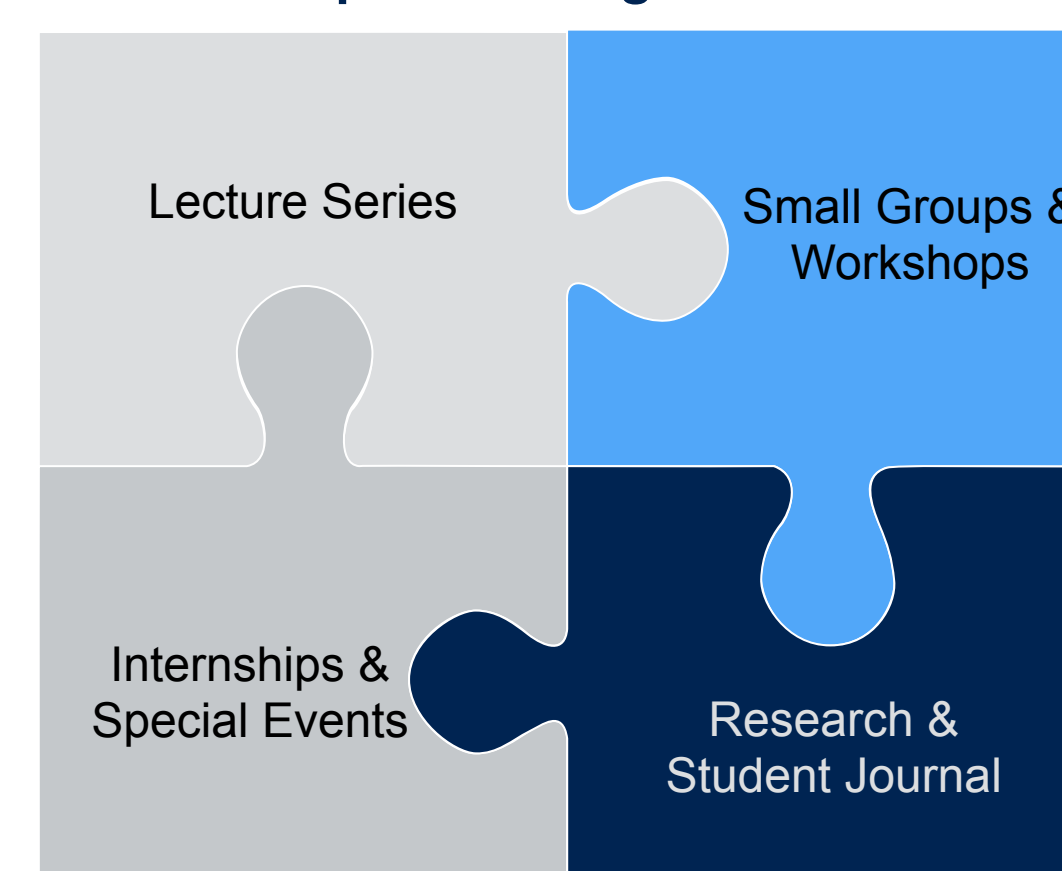
In response to this gap in medical education, students at Sidney Kimmel Medical College (SKMC) at Thomas Jefferson University founded Physician Executive Leadership (PEL) in 2013. PEL is an entirely student-led, student-centered, extracurricular program open to all SKMC students. The program's mission is to provide medical students with a platform to build healthcare knowledge and cultivate leadership skills, in order to become well-informed and capable physician leaders and innovators.

By connecting students to healthcare leaders and introducing them to key topics in healthcare leadership, PEL enables students to develop both depth and breadth of knowledge in a number of subject areas underrepresented in medical education.

Connecting to Healthcare Leaders



Employing Multiple Learning Modalities



Research

Objective

To investigate the effectiveness of Physician Executive Leadership, an open access, student-led healthcare leadership program at Sidney Kimmel Medical College, in preparing students to face five key emerging topics in medical practice: healthcare economics, health policy, care quality and safety, law and medicine, and patient experience.

Design

We assessed the impact of our program by surveying participants on their engagement and satisfaction with their participation in the PEL program, as well as their comprehension of representative content covered by PEL, at the beginning and end of 2015-2016 academic year. Both surveys collected demographic information and featured a 20-question multiple-choice assessment intended to provide an objective measure of what students learned through their participation in PEL. The second survey also included an assessment of students' satisfaction with PEL and their perspectives on PEL's importance in medical education using a 5-point Likert scale.

Contents of the 2015-2016 PEL Assessment Surveys

Both Surveys:

Demographics

- Medical school class year
- College graduation year
- College major
- Experiences between college and medical school
- Past participation in PEL

Objective Assessment

20 multiple choice questions assessing student knowledge of:

- health policy
- health economics
- care quality improvement
- patient experience
- law and medicine

Second Survey Only:

Subjective Assessment

Likert scale responses (1-5) to the following statements:

- Exposure to PEL topics will help me as a physician
- PEL topics should be integrated into medical education
- Overall satisfaction with PEL

Participants and Setting

The survey was administered to medical students at SKMC at Thomas Jefferson University in Philadelphia, PA. All students surveyed completed the PEL program during the 2015-2016 academic year by attending at least five events.

174 students completed the start-of-year survey, and 112 completed the end-of-year survey. Our sample consisted of the 98 students who completed both surveys: 62 of whom were in their first year of medical school, 32 in their second, and four in their third. About one-third (31) of survey participants had completed the PEL program in a previous year.

Data Analysis

Test scores were analyzed using a paired t-test in SPSS Statistics Version 22 (IBM, Armonk, New York). Five questions were excluded because they were later determined to have more than one acceptable answer, were changed between the two surveys, or were answered correctly by less than 20% of participants. Subjective questions were assessed by the percent of participants indicating that they were "satisfied" or "strongly satisfied" with the PEL program, (Likert scores of 4 and 5), and by the percent who "agreed" or "strongly agreed" with statements regarding the importance and value of the PEL program (Likert scores of 4 and 5).

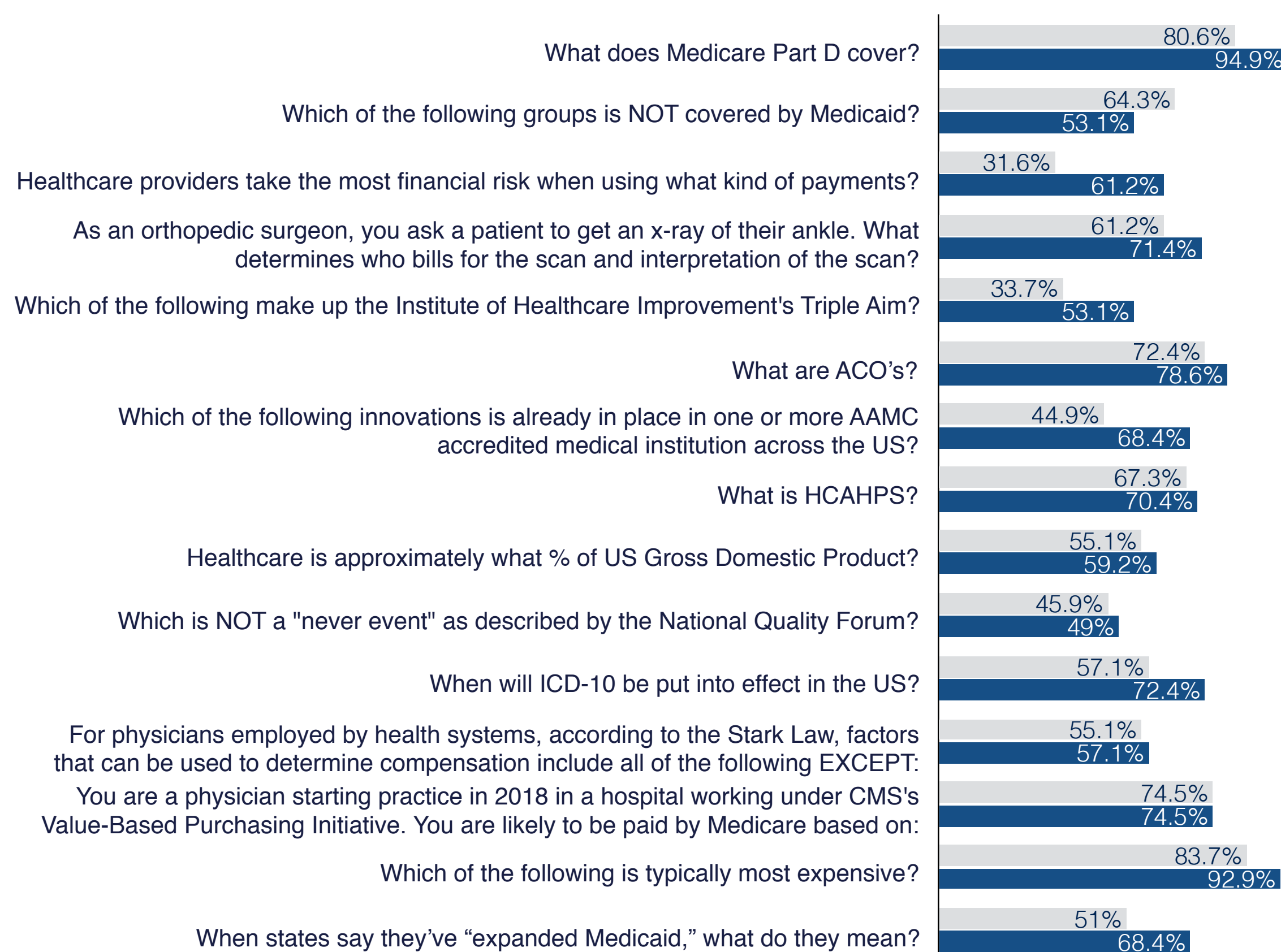
Results

Objective Assessment

n = 98

On average, overall scores on the multiple-choice assessment improved by 9.7% (SD 18.9%) between the beginning and end of the year (CI=6.0-13.5, *p*<0.001). The graph to the right shows average percent correct answers for each question in the start-of-year (gray) and end-of-year (blue) assessments.

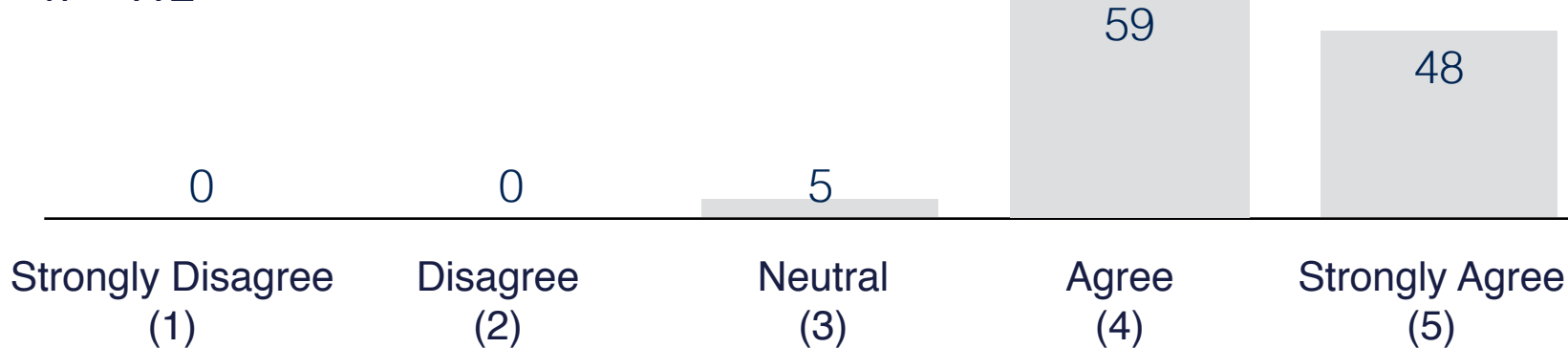
■ Start-of-Year
■ End-of-Year



Subjective Assessment

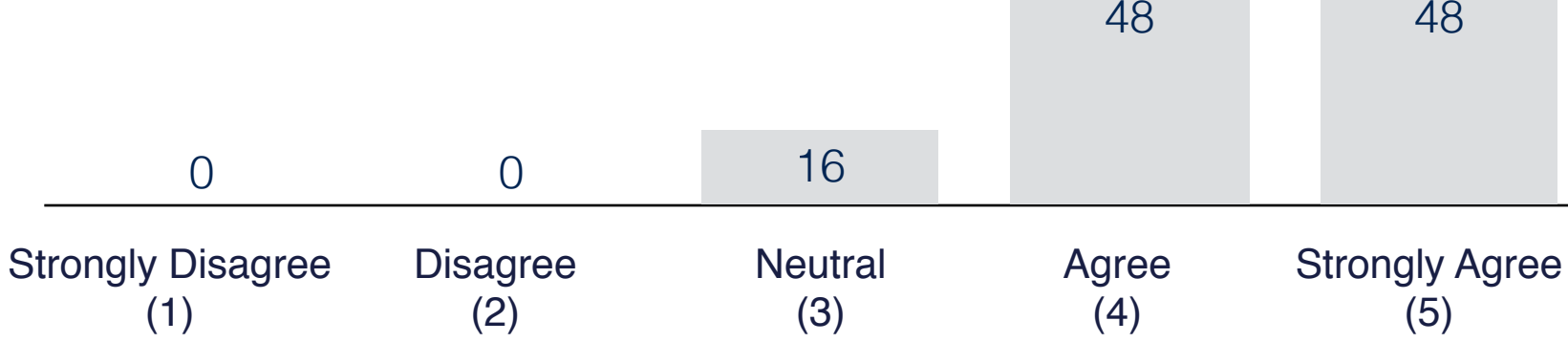
"Exposure to PEL topics will help me as a physician"

n = 112



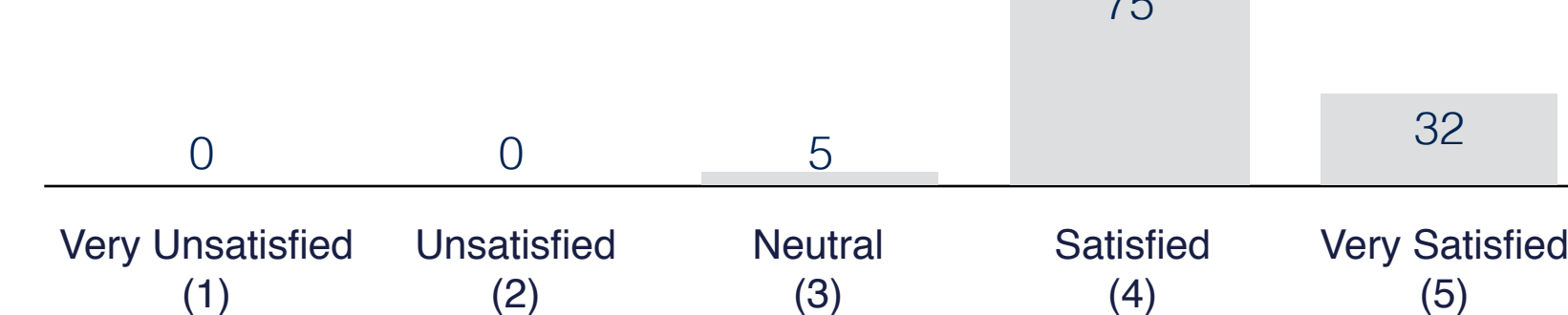
"PEL topics should be integrated into medical education for all students"

n = 112



Overall Satisfaction with PEL

n = 112



Limitations

- Because the survey was initially developed to internally validate the PEL program and better understand participant perceptions of the organization, we did not survey students who did not participate in PEL. A control group would have enabled us to differentiate the effects of PEL involvement from the effects of completing another year of medical school on assessment score.
- More questions would have allowed for stronger conclusions and a more powerful analysis.
- Given the absence of a standardized test for assessing student knowledge of healthcare social sciences, the exam was authored by PEL leadership, and thus, the survey's validity and reliability are unknown.

Conclusions

All medical students will face the complexities of healthcare throughout their careers as clinicians, researchers, educators, and entrepreneurs. Our research demonstrates that students view competence in these non-clinical aspects of medicine as vital to successfully navigating the current healthcare environment and to shaping its future. However, medical education at present does not prioritize these non-clinical teachings. **By creating a program in parallel to the curriculum that does not require changing the curriculum itself, we provide a means through which these topics complement, rather than compete with, clinical medical education**

- Students' overwhelmingly positive responses to the subjective evaluations indicate that participants were highly satisfied with PEL and further validate its student-led, student-centered structure. Given the content of the 2015-2016 PEL program, the improvement in assessment scores was unexpected; although PEL programming addressed several of the topics included in the objective assessment, events were focused on the broader subject of healthcare leadership instead of these topics specifically.
- We expect results to further improve after introducing a formal curriculum in 2016-2017. Furthermore, we will administer a redesigned assessment in order to differentiate between the impact of PEL and that of completing another school year.

Next Steps

For the Program

Based on this research, we are developing a formal curriculum to be implemented in the 2016-17 school year, centered around small-group sessions with case-based discussions focused on each of the core PEL topics. Sessions will be facilitated by a physician leader, student, or expert, and require pre-reading and active participation. Each topic will be addressed in two sessions: the first focused on teaching the fundamentals of the topic, and the second on solving related problems facing healthcare today. In addition to the documented benefits of small-group and case-based learning, these sessions provide students the freedom to tailor their education to their learning styles and interests.^{6,7} To promote further exploration and applied learning, PEL will award select students summer grant funding to conduct self-designed projects with physician leaders and mentors.

PEL Curriculum: Key Topics

Topic	Description
Health Policy	How insurance works, why it exists, and how to affect change at the policy level
Health Finance	How doctors are paid, how value-based care works, and how to access venture capital for innovation
Patient Experience	How it's measured (HCAHPS, CAHPS), how it impacts reimbursement, and what doctors and hospitals can do to improve it
Law & Medicine	How medical malpractice and employment contracts work and influence how care is provided
Care Quality & Safety	How to identify system and process errors, best practices for quality improvement, and how it all impacts the bottom line

For the 2017-2018 academic year, we plan to change the program requirements. For the past three academic years, students have been able to complete the PEL program each year by earning a set number of credits. Students could earn credits by attending PEL lectures, small-group events, or contributing to our online student journal, *The Diagnostic*.

Moving forward, students will be required to: 1) earn one credit in each of PEL's five key subject areas; and 2) earn multiple credits in a single subject area. To fulfill the latter, students will have to attend a lecture, participate in a small-group session, contribute a relevant news article to our weekly newfeed and pursue an independent inquiry into their chosen subject area, via either a summer internship or a piece written for *The Diagnostic*. An example of how a student may complete these new requirements is outlined below.

Sample Requirements for Completion of the PEL Program, 2017-2018

	Lecture Series	Small-Group Session	Current Events: Article of the Week Submission	Independent Inquiry
Healthy Policy	X	X	X	X
Health Finance		X		
Patient Experience			X	
Care Quality & Safety	X			
Law & Medicine	X			

Because this new set of requirements is more extensive than those of previous years, and because students continue to encounter these topics throughout their medical education, PEL participation will become a multi-year engagement that tracks the length of the medical school experience, rather than resetting at the beginning of each academic year.

We hope that by extending PEL participation through all four years of medical school, and creating a more structured set of completion requirements, we will be able to help students achieve both breadth of knowledge in all the subjects PEL teaches and depth of knowledge in the topics that interest them most.

For the Research

In an effort to more accurately capture the impact of the PEL program and address some of the limitations of this current study, we have implemented a number of changes in our research and assessment process, encompassing the questions themselves, the process of administering assessments, and the creation of a control group.

- Questions:** We are working in collaboration with the experts who lead lectures and small group sessions on each of PEL's key subject areas, as well as the Director of Medical Education Research at SKMC to write board-style questions externally validated to cover the material most pertinent to each topic.
- Assessment:** Students will complete individual before-and-after assessments for each of the events they attend that focus on one of PEL's five key subject areas. At the end of the year, all students participating in PEL will take an end-of-year assessment including all of the questions from each topic's individual assessment.
- Control:** For each topic, students who attended a PEL event focused on a particular topic and completed the individual assessment will comprise the study group. Students who did not attend an event focused on that topic, and complete the questions relevant to it only at the end of the year, will comprise the control group. We are in the process of developing a method to recruit a focus group of students not involved in PEL.

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