

**MEDICAL STUDENTS' KNOWLEDGE AND OPINIONS OF THE AFFORDABLE CARE ACT AND
OTHER HEALTH CARE POLICY ISSUES**

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in partial fulfillment of the requirements for the Degree of Doctor of Medicine

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Abstract

Since the Affordable Care Act (ACA) was signed into law in March of 2010, there have been multiple large survey studies focusing on physicians' thoughts towards health care policy issues.¹⁻⁶ Unfortunately, there has not been adequate attention paid to medical students' feelings on reform in the literature. Today's medical students will enter their practice at a vital time in the ACA's implementation and will play an integral role in health care reform throughout their careers.^{7,8} This study is a national project that used a survey tool to demonstrate how well medical students know the details of the ACA and what their feelings are on the legislation. The survey was sent to eight different medical institutions across the country with ten total medical school campuses, using SurveyMonkey to collect results. The institutions were chosen based on their geographic location, mix between private and public institutions, and available investigators at each institution. The survey tool was developed by Tyler Winkelman, MD, from the University of Minnesota after a comprehensive literature review, adaptation of items from his previous survey of medical students in Minnesota performed in 2012, and consultation with physicians and policy experts.⁹

The survey focuses on student's opinion of the ACA, knowledge of nine key provisions in the ACA, level of support of key health care policies, feelings towards health care policy education in medical schools, and socio-demographic information, including political ideology, debt amount and intended specialty. Data analysis was performed using Pearson's Chi-square tests and multiple logistic regression models at The University of Minnesota to test for associations between students' opinion of the ACA and five key predictors: debt, medical school year, political ideology, ACA knowledge, and intended specialty.

A total of 2,761 out of 5,340 medical students (52%) responded to the survey, with 63% of students indicating support for the ACA, 75% agreeing that they understand the key ACA provisions, and 56% indicating professional obligation to assist in implementation of the ACA. Students intending to enter surgery or a surgical subspecialty and students who identified themselves as conservative were found to have less support and professional obligation of the ACA when compared to students entering primary care (Internal medicine, family medicine, pediatrics, internal medicine/pediatrics, or emergency medicine) or identifying themselves as

liberal or moderate. Students that were most knowledgeable of the ACA were found to more likely support the ACA and indicate professional obligation towards the legislation. In conclusion, our study found that the majority of medical students indicate support for the ACA and feel they have a professional obligation in assisting implementation. The views of the ACA differ based on student's political ideology, anticipated specialty, and knowledge of key ACA provisions, but overall, there is optimism that this high level of support can lead to advocacy and successful health care reform down the road.

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Introduction:**Background and Significance of Research question:**

The Patient Protection and Affordable Care Act (PPACA or ACA) was signed into law on March 23, 2010, marking the largest change to our health care system since Medicare was created in 1965.¹⁰ Many criticized the ACA early on because of the Individual Mandate, which requires all Americans to purchase health care insurance or else pay a fine.¹⁰⁻¹² One of the ACA's major goals is to make insurance more affordable by allowing states to either set up their own insurance exchange, adopt a Federally-facilitated exchange, or have some combination of both.¹⁰⁻¹² These exchanges, or "marketplaces" as they are commonly referred to, allow Americans to compare different insurance plans side-by-side and find what is best for them.¹³ To date, there are thirteen states and the District of Columbia who have State-based Marketplaces, three states with Federally-supported Marketplaces, seven states with State-Partnership Marketplaces, and twenty-seven states with Federally-facilitated Marketplaces.¹⁴ It is expected that more than fifteen million Americans will be insured through the exchanges (excluding Medicaid) after the open-enrollment period in 2015.¹⁵

The states also have the opportunity to expand Medicaid if they wish to do so; which as of now, twenty-nine states including the District of Columbia have done.¹⁴ The ACA also allows the government to provide tax credits to many people who do not qualify for Medicaid, but have salaries under the 400% of the Federal Poverty Level.¹⁰⁻¹² The ACA also targets insurance companies and prohibits them from discriminating against individuals for pre-existing conditions or withdrawing coverage after they become ill.¹⁰⁻¹² It also allows for the development of Accountable Care Organizations (ACO's), which are groups of physicians from diverse specialties who work as a team to provide better care and reduce unnecessary hospital admissions and redundant testing by improving communication, in an attempt to reduce costs.¹⁰⁻¹² Overall, the ACA stresses prevention and hopes to improve the quality of care for millions of Americans.

Both the public's and physicians' views of the ACA have been well documented in the literature over the past five years, but unfortunately, proper attention has not been paid to medical students. In regard to the public's opinion, the latest poll from the Henry J. Kaiser

Family Foundation, a non-profit organization dedicated to providing free online health care education, found that after randomly calling 1,503 adults in October 2014, 43% opposed the ACA, 36% supported the Act, and the remainder had no opinion.¹⁶ The general population opposing the ACA has been consistent in Kaiser's polls since 2010, and has also been demonstrated in other surveys. The Pew Research Center found in May 2014 that 55% of the general population oppose the ACA, which has again been consistent with their past survey findings.¹⁷

Physicians have also been opposed to health care reform, which have been demonstrated in multiple large national surveys.¹⁻⁶ The Doctor's Company, a medical malpractice company for over thirty-five years and currently insuring over 70,000 physicians, performed one of these studies in 2012.³ Of the 5,105 physicians surveyed, 60% believed the ACA will negatively affect patient care and 51% believed the ACA will negatively impact their relationship with patients.³ Only 14% planned to participate in ACO's, and 43% went as far to say that they would likely retire in the next five years (by 2017) because of the ACA.³ Jackson and Coker, one of the most recognized physician staffing and recruitment firms in the country, performed a similar study in 2013.⁴ Of the 3,072 practicing physicians they surveyed, 59% stated they opposed the ACA in 2010, and in 2013, 61% felt their opinions had changed for the worse.⁴ Sixty percent also believed that the ACA would negatively affect patient care.⁴ The majority of physicians also believe the ACA will increase administrative duties (66%), cause patients to have less choice in choosing their physician (73%), and ultimately raise overall health care costs (76%).⁴

Physicians' opposition to the ACA has been documented in other studies as well,^{1-2,5-6} but there have been a lack of large-scale surveys to medical students addressing their views. As future clinicians of the US, current medical students will enter their specialties with the major ACA provisions in place, and will play a vital role in the success of health care reform throughout their careers. Dr. Elliott Fisher, the Director of The Dartmouth Institute for Health Policy and Clinical Practice, has published numerous papers on health care reform and coined the term "Accountable Care Organizations." Dr. Fisher said in his 2008 paper published in the NEJM, "Physicians have the unique opportunity to become our most credible and effective

leaders of progress toward a new world of coordinated, sensible, outcome-oriented care.”¹⁸ As the next generation of physicians in this country, we must know if we are prepared to lead and allow for health care reform to succeed. In order to advocate effectively, it is vital that medical students have the fundamental knowledge of health care reform.

There have been two major studies addressing medical students’ thoughts on the ACA and health care policy. The first was performed by Kristen Huntoon, from the New York College of Osteopathic Medicine, and her colleagues between October and December of 2010.¹⁹ The study sent a survey by listserv to students at ten medical schools across the country: Albany Medical College, George Washington School of Medicine, Johns Hopkins Medical School, New York College of Osteopathic Medicine, OHSU School of Medicine, UCSF School of Medicine, University of Iowa Carver School of Medicine, Keck School of Medicine of USC, University of Washington School of Medicine, and Vanderbilt University School of Medicine. Out of the 6,982 students that were sent the survey, 1,232 responded for a completion rate of 18%. Eighty percent of these students supported the ACA, but 72% of them felt more reform was needed.¹⁹ Only 31% thought the ACA would improve care, while 48% were unsure. Overall, 15% agreed with repeal of the ACA.¹⁹

The second major study was performed by Tyler Winkelman, MD, and his research team.⁹ Winkelman et. al. sent their survey to 1235 medical students in January 2011 at three campuses in Minnesota (University of Minnesota Medical School- Duluth and Twin Cities campuses and Mayo Medical School) and had 835 students respond for a completion rate of 68%.⁹ They found that only 47% of students supported the ACA, while 41% of students didn’t have an opinion on supporting the legislation.⁹ Nearly 70% of the students surveyed felt they had a professional obligation to play a role in implementing the ACA, but only 48% felt they understood the basic ACA components.⁹ The study concluded that the surveyed population “remains ignorant and indecisive about the ACA, with a minority of respondents indicating understanding”; and that this study, as well as others “demonstrated insufficient policy education in medical school and suggest that increasing such efforts may be required for successful implementation of the ACA and future health care reform initiatives.”⁹

These two studies are a great starting point to understand medical students’ feeling

towards health care reform, but they have conflicting data. The Huntoon et. al. study found a large majority (80%) supported the ACA, while less than half (47%) supported the ACA in the Winkelman et. al. study.^{9,19} The Huntoon et. al. study also had a very low completion rate, which could have been from the use of listservs to distribute the survey, as Dr. Winkelman had a much higher completion rate after sending the survey to individual email addresses.^{9,19} Both studies do not test the students to determine their overall knowledge of the ACA provisions. Even though the studies were only completed a few years ago, there have been major provisions of the ACA implemented in the last two years, including the marketplaces and healthcare.gov in 2014, which have been widely publicized. The development of new health care reform and policy courses may have been implemented or improved in medical education recently, and there have been multiple new classes of students that have entered medical school since these surveys were completed, making the studies relatively out of date.

Health care reform and policy education in medical schools has been discussed in peer-reviewed journals for decades, but there have always been challenges with implementing a program in medical education. Dr. Mitesh Patel discussed many barriers that exist when trying to implement a program in his 2011 NEJM paper.²⁰ These barriers include the challenge of scheduling lectures during an already vigorous scientific curriculum in medical school, hiring or developing an interdisciplinary faculty team dedicated to teaching policy, and implementing the right teaching methods as there is a current lack of research in this area.²⁰ Dr. Patel mentions in his paper that less than half of surveyed medical students in 2007 felt appropriately educated by their school on topics of medical economics and health care systems.¹⁹ A study performed by Dr. David Mou and colleagues in 2010 sent surveys to 160 Deans at allopathic and osteopathic institutions.²¹ Dr. Mou received ninety-three responses and found that although 94% of schools had some form of policy education, there was a significant amount of variation in coursework and curriculum design.²¹ The average amount of instruction among these medical schools over the four years was only fourteen hours, and the majority (58%) of Deans felt they currently had “too little” health care policy education.”²¹ As a positive sign, 52% of these Deans reported that their institution is currently in the process of expanding their health care policy education.²¹

To determine what current medical students think of health care reform on a national scale, Dr. Winkelman gathered a team of investigators at ten different medical institution campuses around the country and set out to characterize medical students' opinions and knowledge of the Affordable Care Act, as well as their feelings on other health policy issues and its place in medical education. Dr. Winkelman adapted his 2012 survey to include questions based on previous published surveys, including a survey study by Dr. Ryan Antiel and his research team that was distributed to physicians in 2009.^{1,9} Dr. Winkelman also developed questions on the provisions of the ACA based on an online quiz by the Henry J. Kaiser Family Foundation, allowing the survey to test students' knowledge of the ACA.²² By surveying students from diverse institutions across the country, we can assess the overall understanding of the health care reform document and the provisions that will impact the way future physicians practice medicine. We also sought to find associations between students' opinion to a variety of information, including their knowledge of the key ACA provisions, political ideology, future specialty, medical school debt, and medical student year.

Research Questions:

This study aims to discover if today's medical students support the ACA and if they feel they have a professional obligation to assist in reform efforts? Other research questions include: Do students have the necessary essential knowledge of the ACA for future reform success?; Do students' feel adequately educated by their medical institution on health care reform and policy?; How do students' opinion of the ACA relate to their political ideology, medical school debt, desired future specialty, class year, and knowledge of key ACA provisions?

As the key investigator in charge of distribution of the survey to the University of Arizona (UA), this thesis will also single out the surveys to medical students at the University of Arizona College of Medicine-Tucson and Phoenix campuses. We would like to know how UA medical students compare among the national sample of medical students, in terms of their opinion and knowledge of the ACA, opinion of health care policies and hypothetical situations, and their feelings on health care policy education in their medical institution's curriculum?

Hypothesis:

Based on previous data collected by Winkelman et. al. in Minnesota in 2011 and Huntoon et. al in 2010, we hypothesize that knowledge and understanding of the ACA will be low across the nation, while their support of reform and sense of professional obligations will be high.^{9,19} We also predict that students will feel inadequately educated by their medical school on health care reform, as the barriers outlined by Dr. Patel (mentioned above) may have prevented adequate reform education to be fully implemented at this time.²⁰ We also hypothesize that future primary care physicians will support the ACA more than specialized medical fields, especially surgical subspecialties, and we predict students who view themselves as liberal will have a higher support rate of the ACA than conservative students. Since University of Arizona College of Medicine campuses are public institutions and have an emphasis of placing students into primary care, we predict the UA students will have a higher percentage of support for the ACA compared to the overall national support of the legislature, but still have inadequate knowledge of the ACA provisions. With the close proximity to the US-Mexico border, and since UA students often work with immigrants in hospitals and clinics, we predict that UA students will have higher support for providing healthcare to undocumented immigrants, as well as the underinsured or uninsured, when compared to the national sample.

Research Goal:

The main goal of this study is to make medical students' current views and knowledge of the ACA well documented by publishing in a respected peer-reviewed journal. We hope the results and conclusions made from this study are used by medical institutions to improve and expand their health care reform and policy curriculum, as well as promote advocacy among students. We also hope the results are seen by political figures and people involved in health policy legislature in order to improve future policy implementation. The results will inform policymakers about issues on which they can find support amongst future physicians. More importantly, we hope to promote student learning and encourage medical students to expand their knowledge of the ACA, which will be a necessity when they practice clinical medicine. We also hope to spark an interest in health care reform and advocacy among current students. The

success of health care reform weighs heavily on the future physicians at medical schools across the country.^{7,18} This study will help us understand how prepared our future generation of doctors are to lead this reform.

Research Materials and Methods

This study used a revised survey tool created by Tyler Winkelman, MD, which was first sent to students at The University of Minnesota Duluth and Twin Cities and Mayo Medical School in 2012, with other adaptations coming from Antiel et. al and Henry J. Kaiser Family Foundation, as mentioned above.^{1,9,22} The survey tool was also developed after a comprehensive literature review and consultation with physicians and policy experts, as well as input from the researchers involved in the study. Ten total campuses from eight medical institutions were chosen based on their geographic location, mix of private and public institutions, and available researchers, known as “investigators”, at each institution who Dr. Winkelman was able to recruit. These investigators were in charge of obtaining IRB approval and individual student email addresses for distribution of the survey. I personally was the investigator for The University of Arizona College of Medicine - Tucson and Phoenix campuses.

The institutions involved included the University of Minnesota Medical School (Twin Cities and Duluth campuses), University of Colorado School of Medicine, Vanderbilt University School of Medicine, University of Louisville School of Medicine, University of Cincinnati College of Medicine, Johns Hopkins University School of Medicine, University of Arizona College of Medicine (Tucson and Phoenix campuses), and Harvard Medical School. Cognitive testing with medical residents was performed at the University of Minnesota in order to enhance validity and usability of the survey tool. A test survey was also performed in Minnesota in order to estimate time of survey completion, which ranged from five to fifteen minutes, depending on the amount of input the subject wanted to include in the comment section of the survey.

After IRB approval at each institution, each investigator obtain individual student email addresses, as listservs were not used for the study as they may contribute to lower overall completion rates. Active students enrolled in the medical institutions, as well as those taking time to complete research or additional degrees (PhD, masters), were sent the survey. By using individual email addresses instead of listservs, we were able to track the completion by each student by assigning each email address a unique URL through SurveyMonkey software. The unique URL made the survey answers confidential and not seen by the investigators or other researchers, and prevented reminder emails to the individual once the survey was completed.

Each student was first sent the survey in the end of April 2014, and after one week, they were sent a reminder email only if they had not completed the survey. Students were contacted up to three times total with the survey link and were only allowed to complete the survey once. Student participation was 100% voluntary and no incentives or financial rewards were offered to students for survey completion. There was an opt-out link for students in each email they received, which allowed them to no longer receive emails from investigators. Collection of the surveys was complete at the end of June 2014. Overall, a total of 5,340 medical students were emailed the survey.

The survey was made up of seven major sections, which included students' opinion of the ACA, their knowledge of key ACA provisions, their opinion of six health care policies, their level of agreement with seven health care policies and hypothetical situations, their feelings on their medical school's role on health care reform education, socio-demographic information, as well as a comment section where students could write about their thoughts on the ACA and health care policies. Sections one, three, four, and five used a five-point Likert scale (strongly disagree, disagree, no opinion, agree, and strongly agree) to assess student opinions to the questions.

The first section asked students to indicate their level of agreement to four statements: "I understand the basic components of the ACA"; "I support the ACA"; "Physicians are professionally obligated to assist with implementation of the ACA"; "The ACA will have a negative influence on my future career in medicine."

The second section focused on students' knowledge of the ACA and asked nine true/false questions: "The ACA requires individuals to have health insurance or else pay a fine?"; "The ACA increases payments to primary care physicians for two years?"; "The ACA creates a new government-run insurance plan to be offered along with private plans?"; "The ACA allows the federal government to expand Medicaid in every state?"; "The ACA requires large businesses (more than 100 employees) to provide health insurance for their employees or else pay a fine?"; "The ACA includes an overhaul of tort reform law?"; "The ACA defines benefits that private insurance companies must include in their insurance plans?"; "The ACA creates health insurance exchanges or marketplaces where small businesses and individuals can

purchase insurance and compare prices and benefits?"; "The ACA prevents people from being denied coverage due to a pre-existing condition?" These nine questions were chosen because they represented the most significant provisions of the ACA.^{24,25}

The third section asked students' opinions of six health care policies: "Medical care should be provided to all, regardless of ability to pay"; "Access to health care is a privilege, not a right"; "Addressing health care policy issues, as important as that may be, falls outside the scope of the professional obligations of a physician"; "The threat of malpractice lawsuits substantially increases the overall cost of health care"; "I would favor limiting physician income in order to expand access to basic care for those currently lacking such care"; "Every physician is professionally obligated to care for the uninsured and underinsured."

The fourth section also focused on students' level of agreement with health care policy, as well as hypothetical situations. The seven questions asked students to answer their level of support for: "Expanding Medicaid coverage to provide insurance to more low-income Americans"; "Keeping children and young adults on their parents' health insurance until 26"; "Allowing insurance companies to deny coverage for 'pre-existing conditions'"; "Undocumented immigrants receiving health insurance through government assistance programs"; "Legislation that would enact a 'single-payer' health care system"; "Increasing payments to physicians who provide primary care; Increasing payments to physicians who provide specialty care."

The fifth section focused on health policy education and students' political activity throughout medical school, as well as students' influence by debt and future earnings. We asked students their level of agreement with the following six statements: "Health care policy topics should be included in medical education"; "My medical education has provided adequate training in health care policy"; "My medical education has provided adequate advocacy education"; "Medical school debt has or will influence my choice of specialty"; "Future earnings have or will influence my choice of specialty"; "I have chosen to be politically active during medical school."

We also asked a variety of questions that will act as key predictors for making associations to students' opinion of the ACA. The key predictors include demographic

characteristics (age, gender, race, medical school year); anticipated specialty type, categorized as primary care (family medicine, internal medicine, internal medicine and pediatrics, pediatrics, emergency medicine), general surgery and surgical subspecialties (urology, plastics, orthopaedics, ophthalmology, OBGYN, neurological surgery, otolaryngology (ENT), oral maxillofacial surgery (OMFS), cardiothoracic, vascular, and trauma surgery), procedural specialties (dermatology, anesthesiology, radiology, radiology-oncology, interventional cardiology, gastroenterology), nonprocedural specialties (neurology, psychiatry, pediatric neurology, physical medicine and rehabilitation, hematology/oncology, neurodevelopmental disabilities, rheumatology, cardiology, infectious disease) nonclinical specialties (pathology, administration), and other/unknown; political ideology (liberal/somewhat liberal, moderate, conservative/somewhat conservative, other), educational debt level (none, less than \$100,000, \$100,000-\$200,000, and more than \$200,000), and knowledge score (explained below).

For the analysis of the data, we combined the five-point Likert scale into a three-point Likert scale, by combining the strongly agree and agree answers to make one category, as well as the strongly disagree and disagree answers into another category. The three categories of agree, no opinion, and disagree allow for easy interpretation of the data by the reader. The responses from each section were tabulated and summarized with both frequencies and percentages. Pearson's Chi-square tests and multiple logistic regression models were then run at the Biostatistical Design and Analysis Center at University of Minnesota by Cynthia S. Davey, using SAS version 9.3 for analysis (SAS Institute, Cary NC). In the knowledge portion of the survey (section 2), the answers for the nine true/false question were summated into a knowledge score for each student. One point was given for correct answers and zero points for incorrect answers, to make up a maximum knowledge score of nine. Two groups were then created based on the knowledge score being either above or below the knowledge score mean. The knowledge score was only calculated for students who completed all nine questions. Chi-squared tests and multiple logistic regression models were then run in SAS to find independent associations between the four ACA opinion questions (self-reported understanding of the ACA, support for the ACA, anticipated impact on student's future career, and professional obligation to implement the ACA) and the key predictors, including year in medical school, anticipated

specialty choice, political affiliation, knowledge score, and educational debt. A p-value of <0.05 was considered statistically significant.

Results

Of the 5,340 medical students who were emailed the survey, 2,761 responded for an overall completion rate of 51.7%. **Table 1** demonstrates the number of surveys completed at each institution and the overall percentage of contribution of each institution to the total 2,761 responses. The University of Colorado School of Medicine contributing the most with 17.2%, as contribution directly tied with the student population at each institution. The University of Arizona campuses contributed 11% of the survey with roughly 5.5% from each campus. The survey was sent to 444 students at the Tucson campus and 276 at the Phoenix campus. Each UA student was able to choose their which UA campus they attend at the end of the survey, meaning students who completed their first two years in Tucson and last two in Phoenix are able to decide their primary campus. There were twenty-five students who failed to indicate which campus they attended (“UA unspecified”), but their unique URL was tied to an <email.arizona.edu> address, allowing us to use their survey data in the combined UA analysis. Tucson campus had 151 students respond for a completion rate of 34.0%, while Phoenix had 153 students complete the survey for a completion rate of 55.4%. Completion rates ranged from 34.0% to 78.5% across the ten campuses, indicating sufficient contribution from the different medical institutions.

Table 1. Overall Survey Completion by Medical Institution

Medical school		
School	No. surveys	Percent
UMN Twin Cities	385	13.9
UMN - Duluth	88	3.2
Louisville	253	9.2
Cincinnati	284	10.3
Vanderbilt	294	10.7
UAZ - Phoenix	153	5.5
UAZ - Tucson	151	5.5
Colorado	476	17.2
Harvard	401	14.5
Hopkins	214	7.7
UMN not specified*	37	1.3
UAZ not specified*	25	0.9

* UMN or UA campus was not answered at the end of the survey, but came from a unique URL linked to a UMN or UA email address

The demographic characteristics are displayed in **Table 2a** for the national sample and **Table 2b** for the UA campuses. The majority of the national respondents were male (51.4%), Caucasian (67.5%), and between the ages of 25 and 29 (57.6%). The race, gender, and age were similar to the AAMC's national medical student demographics of 2014.²³ The UA campuses had a higher percentage of females respond (51.9%), and also had a higher percentage of Caucasian students (75.3%) compared to the national sample. UA also had a higher percentage of Hispanic students compared to the national data (6.9% vs 5.7%), and a lower percentage of African Americans (1.0% vs 4.0%) and Asians (7.2% vs 15.6%). The majority of UA respondents were also between the ages 25 and 29 (53.6%), and there were a higher percentage of respondents over 30 years old compared to the national sample (19.2% vs 12.8%).

Nationally, fourth year students responded the most (28.6%), followed by first, third, and second year students (25.9%, 24.7%, 17.1%). The UA respondents had a different distribution among classes, with first year students making up the majority (33.5%), followed by second, third, and fourth year students (23.7%, 23.0%, 16.5%). On a national scale, 45.1% intend to enter primary care, while 23% intend to go into general surgery or a surgical subspecialty. UA had less intend to enter primary care (31.7%), and a similar number desiring surgery (25.1%). UA had a larger number of students desiring a procedural specialty at 21.7%, compared to the national result of 9.1%. The majority of both the national and UA respondents identified themselves as liberal/somewhat liberal (57.6% vs 54.8%), but UA had more conservative students at 22.3% compared nationally at 16.5%. Overall, the national population had more than 75% indicate liberal or moderate political affiliation. The majority of all respondents will have an estimated educational debt of \$200,000 or greater (34.3% nationally, 40.9% for UA), and greater than two-thirds overall will have more than \$100,000 of debt by the end of their medical education.

Table 2a. Characteristics of Overall Study Population^a	
Socio-demographic characteristic	No. (%)
Gender	
Female	1248 (48.7)
Male	1317 (51.4)
Age	
20 - 24	762 (29.6)
25 - 29	1486 (57.6)
30 and older	330 (12.8)
Race	
Black/African American	99 (4.0)
White, non-Hispanic	1694 (67.5)
Hispanic; White/Unspecified	144 (5.7)
Asian	390 (15.6)
Mixed	123 (4.9)
Other	58 (2.3)
Year in medical school	
First year	667 (25.9)
Second year	441 (17.1)
Third year	635 (24.7)
Fourth year	735 (28.6)
Masters/PhD/Other ^b	95 (3.7)
Intended specialty	
Primary care	1161 (45.1)
Surgery	590 (23.0)
Procedural specialty	235 (9.1)
Nonprocedural specialty	153 (6.0)
Nonclinical specialty	30 (1.2)
Unknown/Other	403 (15.7)
Political ideology	
Liberal/Somewhat Liberal	1478 (57.6)
Moderate	545 (21.2)
Conservative/Somewhat conservative	424 (16.5)
Other	121 (4.7)
Estimated educational debt	
None	352 (13.7)
Less than \$100,000	483 (18.8)
\$100,000 - \$200,000	855 (33.3)
\$200,000 or more	881 (34.3)

^a Categories may not total 2761 due to partially completed surveys

^b Represents students currently completing additional degree or research

Table 2b. Characteristics of UA COM-Tucson and Phoenix Population^a	
Socio-demographic characteristic	No. (%)
University Campus	
Tucson	151 (45.9)
Phoenix	153 (46.5)
UA not specified	25 (7.6)
Gender	
Female	157(51.8)
Male	146(48.2)
Age	
20 - 24	85 (28.2)
25 - 29	162(53.6)
30 and older	55 (18.2)
Race	
Black/African American	3 (1.0)
White, non-Hispanic	229 (75.3)
Hispanic; White/Unspecified	21 (6.9)
Asian	22(7.2)
Mixed	3 (1.0)
Other	26 (8.6)
Year in medical school	
First year	102 (33.5)
Second year	72 (23.7)
Third year	70 (23.0)
Fourth year	50 (16.5)
Masters/PhD/Other ^b	10 (3.3)
Intended specialty	
Primary care	96 (31.7)
Surgery	76 (25.1)
Procedural specialty	66 (21.7)
Nonprocedural specialty	11 (3.7)
Nonclinical specialty	4 (1.3)
Unknown/Other	50 (16.5)
Political ideology	
Liberal/Somewhat Liberal	165 (54.8)
Moderate	56 (18.6)
Conservative/Somewhat conservative	67 (22.3)
Other	13 (4.3)
Estimated educational debt	
None	25 (8.3)
Less than \$100,000	58 (19.1)
\$100,000 - \$200,000	96 (31.7)
\$200,000 or more	124 (40.9)

^a Categories may not total 330 due to partially completed surveys

^b Represents students currently completing additional degree or research

The first section of the survey focusing on students' opinion of the ACA is demonstrated in **Figure 1a**. The majority of students overall felt they had adequate understanding of the ACA basic components (75.3%). The majority also supported the ACA (62.8%) and agreed they are professionally obligated to play a role in the implementation of the ACA (56.1%). A large portion of the respondents felt that the ACA would not have a negative impact on their careers (42.5%), but a large proportion indicated uncertainty to this statement by answering "no opinion" (36.5%). The UA respondents had very similar responses compared to the national sample, as shown in **Figure 1b**. UA had slightly less support for the ACA at 59.6%, but felt similar in understanding the Act (72.4%), profession obligation in assisting the ACA (55.7%), and positive expectations on its impact on their careers (42.1%).

Figure 1a. Medical Student Opinions Regarding the Affordable Care Act

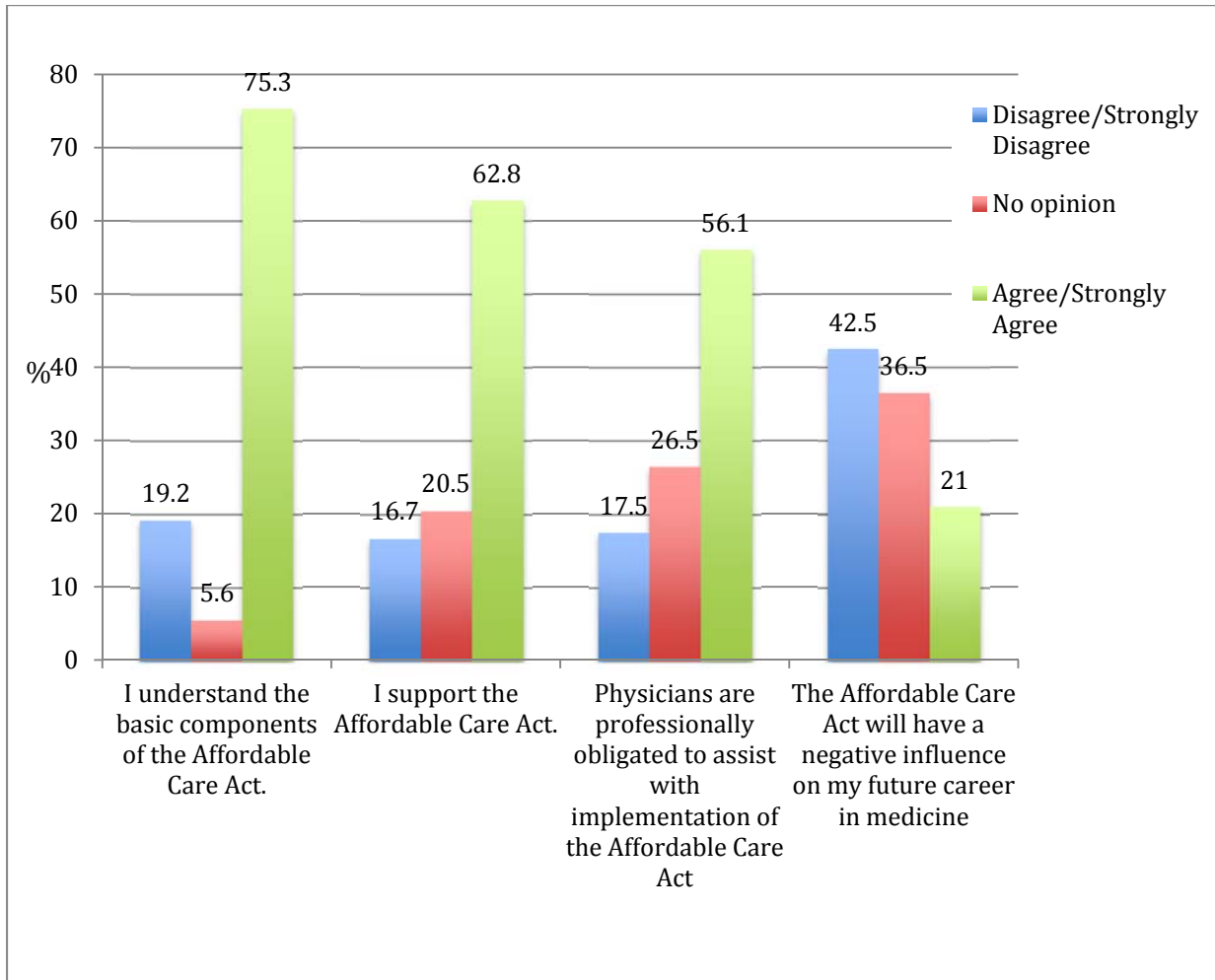
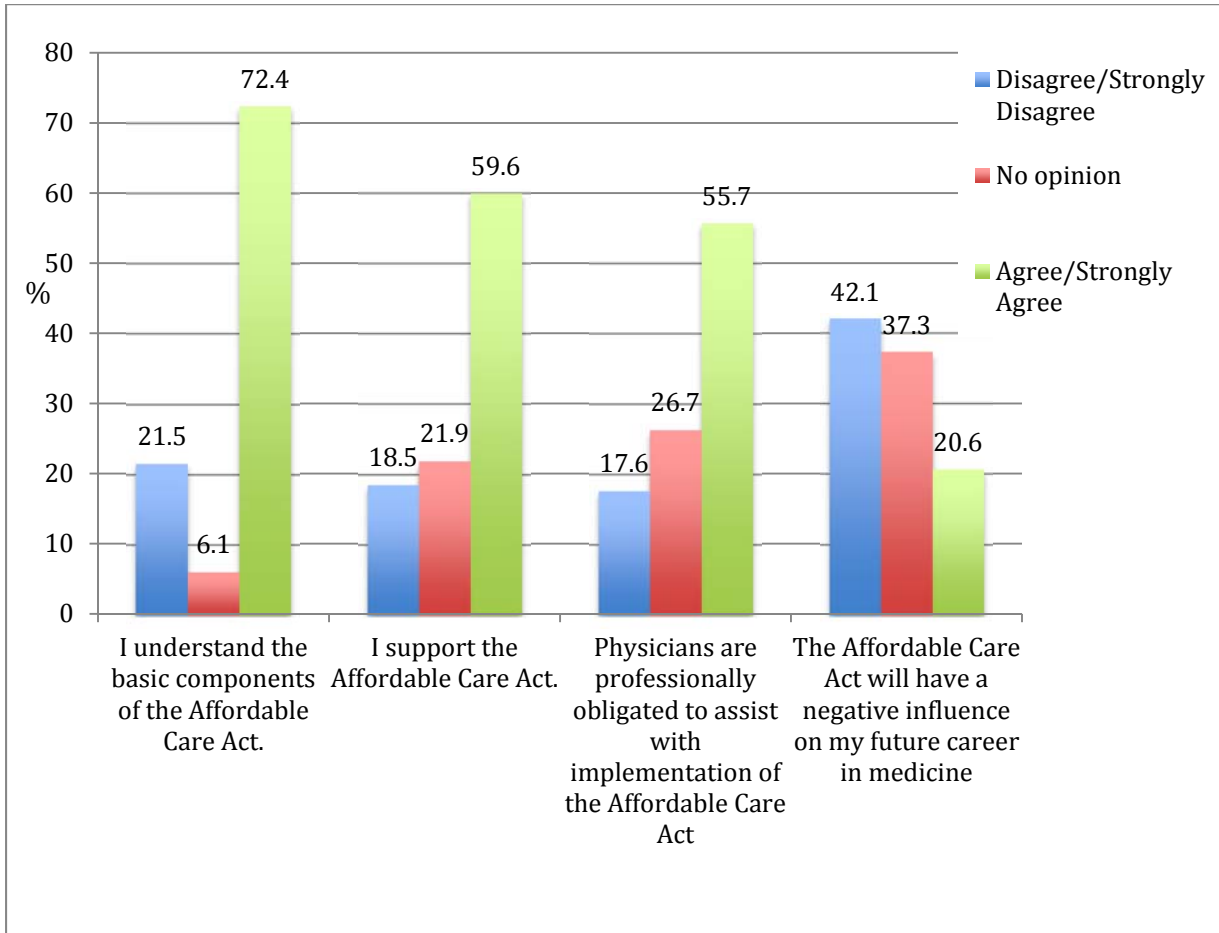


Figure 1b. UA COM-Tucson and Phoenix Medical Student Opinions Regarding the Affordable Care Act



Section two focused on the responses to the nine true/false questions, which are displayed in **Table 3a** and **Table 3b**. The majority of the national respondents answered seven of the nine questions correctly (61%), but 11% responded incorrectly to four or more of the questions. The majority of both the national sample and UA respondents answered two of the questions incorrectly. “The ACA creates a new government-run insurance plan to be offered along with private plans?” was answered incorrectly by 53.3% overall and 55.9% by UA students. “The ACA allows the federal government to expand Medicaid in every state?” was incorrectly answered by 50.5% overall and 51.9% by UA students. The majority of both the national sample and UA students knew about the individual mandate (95.9%, 93.9%), prohibiting pre-existing conditions (97.7%, 98.1%), implementing insurance exchanges or marketplaces (95.8%, 94.9%), and requiring large business to provide insurance to employees (91.7%, 89.1%). There was less knowledge that the ACA does not include an overhaul of tort reform, with 70.8% of the national sample answering correctly and 68.5% of UA students answering correctly. There was also less knowledge that primary care physicians will receive an increase in payments for the next two years, as only 61.2% of the national sample answered correctly and only 59.2% of UA students answered correctly. The overall knowledge score was 6.9 ± 1.3 in the national sample and 6.3 ± 1.7 in the UA sample out of the nine questions, representing a national average of 76.7% and UA average of 73.3%.

Table 3a. Overall Medical Student Responses to Nine True/False Questions Regarding ACA Provisions

The Affordable Care Act...	No. (%)	
	True	False
Requires individuals to have health insurance or else pay a fine.	2539 (95.9)*	108 (4.1)
Increases payments to primary care physicians for two years.	1609 (61.2)*	1021 (38.8)
Creates a new government-run insurance plan to be offered along with private plans.	1406 (53.3)	1232 (46.7)*
Allows the federal government to expand Medicaid in every state.	1330 (50.5)	1302 (49.5)*
Requires large businesses (More than 100 employees) to provide health insurance for their employees or else pay a fine.	2420 (91.7)*	219 (8.3)
Includes an overhaul of tort reform law.	768 (29.3)	1858 (70.8)*
Defines benefits that private insurance companies must include in their insurance plans.	2233 (85.0)*	395 (15.0)
Creates health insurance exchanges or marketplaces where small businesses and individuals can purchase insurance and compare prices and benefits.	2530 (95.8)*	111 (4.2)
Prevents people from being denied coverage due to a pre-existing condition.	2576 (97.7)*	61 (2.3)

^a Answers do not sum to 2761 due to partially completed surveys

* Represents correct answer

Table 3b. UA COM-Tucson and Phoenix Medical Student Responses to Nine True/False Questions Regarding ACA Provisions

The Affordable Care Act...	No. (%)	
	True	False
Requires individuals to have health insurance or else pay a fine.	294 (93.9)*	19 (6.1)
Increases payments to primary care physicians for two years.	184 (59.2)*	127 (40.8)
Creates a new government-run insurance plan to be offered along with private plans.	175 (55.9)	138 (44.1)*
Allows the federal government to expand Medicaid in every state.	162 (51.9)	150 (48.1)*
Requires large businesses (More than 100 employees) to provide health insurance for their employees or else pay a fine.	279 (89.1)*	34 (10.9)
Includes an overhaul of tort reform law.	98 (31.5)	213 (68.5)*
Defines benefits that private insurance companies must include in their insurance plans.	267 (85.3)*	46 (14.7)
Creates health insurance exchanges or marketplaces where small businesses and individuals can purchase insurance and compare prices and benefits.	297 (94.9)*	16 (5.1)
Prevents people from being denied coverage due to a pre-existing condition.	306 (98.1)*	6 (1.9)

^a Answers do not sum to 330 due to partially completed surveys

* Represents correct answer

Multiple logistic regression models were used to form **Table 4**, which demonstrates associations with odds ratios between the overall students' answers to the four ACA opinion statements and five key predictors: debt, medical school year, political ideology, knowledge score, and intended specialty. The regression model failed to demonstrate a statistically significant ($p < 0.05$) relationship between medical school year and students' support, understanding, professional obligation, and expectations of the ACA. Third and fourth year classes were shown to have less support for the ACA when compared to first and second year classes, but this was only marginally significant ($p = 0.075$) and did not meet our statistically significant criteria of $p < 0.05$. Students performing a PhD, research, or an additional degree were found to believe they have understanding of the basic ACA components (OR=2.9 (1.3-6.6)).

The models did find significant ($p < 0.05$, $p < 0.001$) relationships between students with intended surgical specialties and ACA opinions. Students going into surgery are less likely to indicate support for the ACA (OR=0.6 (0.4-0.7)), less likely to feel professionally obligated to implement the ACA (OR=0.7 (0.6-0.9)), and more likely to think the ACA will negatively impact their career (OR=1.9 (1.5-2.6)) when compared to students who intend to go into primary care. This was also true for students who selected a procedural specialty compared to primary care, in terms of ACA support (OR=0.4 (0.3-0.6)), professional obligation (OR=0.7 (0.5-0.96)), and negative impact on their career (OR=2.3 (0.6-3.5)).

When comparing political ideology in **Table 4**, students who identified themselves as liberal or moderate were more likely to support the ACA (OR=35.1 (25.4-48.5), OR=5.7 (4.1-7.9)), feel professional obligation towards ACA implementation (OR=4.7 (3.6-6.0), OR=1.9 (1.4-2.5)), and be less likely to think the ACA will negatively impact their careers (OR=0.06 (0.04-0.08), OR=0.25 (0.19-0.34)), when compared to conservative students. Liberal students were also found to indicate understanding of the basic ACA components (OR=2.2 (1.7-2.9)) compared to conservative students. Students with above average knowledge scores were more likely to indicate support for the ACA (OR=1.7 (1.4-2.1)), understanding of the ACA (OR=2.0 (1.6-2.4)), professional obligation towards the ACA (OR=1.2 (1.02-1.5)) when compared to students with below average knowledge scores. The models did not find significant relationships between the

amount of educational debt and ACA opinions. All significant findings are bold and in red. A regression model was not performed for UA students.

Table 4. Overall Odds of Agreement With Four Statements Regarding the Affordable Care Act (ACA)^a

	I understand the basic components of the Affordable Care Act.	I support the Affordable Care Act.	Physicians are professionally obligated to assist with implementation of the Affordable Care Act	The Affordable Care Act will have a <u>negative</u> influence on my future career in medicine
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Year in medical school				
First year	1.0	1.0	1.0	1.0
Second year	1.1 (0.8-1.5)	1.0 (0.7-1.4)	0.9 (0.7-1.2)	1.0 (0.7-1.5)
Third year	0.8 (0.6-1.1)	0.7 (0.5-0.9)* [†]	0.8 (0.6-1.0)	1.2 (0.8-1.7)
Fourth year	0.9 (0.7-1.2)	0.7 (0.5-0.98)* [†]	0.8 (0.6-1.0)	1.2 (0.8-1.8)
PhD/Masters/Other	2.9 (1.3-6.6)*	1.0 (0.5-2.1)	1.1 (0.7-2.0)	0.8 (0.3-1.8)
Anticipated Specialty				
Primary care	1.0	1.0	1.0	1.0
Surgery	0.7 (0.6-0.9)* [†]	0.6 (0.4-0.7)**	0.7 (0.6-0.9)*	1.9 (1.5-2.6)**
Procedural specialty	0.8 (0.6-1.1)	0.4 (0.3-0.6)**	0.7 (0.5-0.97)*	2.3 (1.6-3.5)**
Non-procedural specialty	0.6 (0.4-0.9)* [†]	0.8 (0.5-1.2)	1.3 (0.8-1.9)	1.2 (0.7-2.1)
Non-clinical specialty	0.7 (0.3-1.8)	1.0(0.4-3.1)	0.9 (0.4-1.9)	1.4(0.4-4.3)
Unknown/Other	0.8 (0.6-1.1)	0.6 (0.4-0.8)*	0.7 (0.5-0.9)*	1.2 (0.9-1.8)
Political affiliation				
Conservative	1.0	1.0	1.0	1.0
Moderate	1.2 (0.9-1.7)	5.7 (4.1-7.9)**	1.9 (1.4-2.5)**	0.25 (0.19-0.34)**
Liberal	2.2 (1.7-2.9)**	35.3 (25.4-48.5)**	4.7 (3.6-6.0)**	0.06 (0.04-0.08)**
Other	1.2 (0.9-1.7)	2.1 (1.3-3.5)	1.1 (0.7-1.8)	0.8 (0.5-1.2)
Knowledge Score				
Mean and below	1.0	1.0	1.0	1.0
Above mean	2.0 (1.6-2.4)**	1.7 (1.4-2.1)**	1.2 (1.02-1.5)*	0.8 (0.6-1.0)
Educational debt				
Less than \$100,000	1.0	1.0	1.0	1.0
\$100,000 - \$200,000	0.9 (0.7-1.1)	0.9 (0.7-1.1)	0.9 (0.7-1.1)	1.0 (0.8-1.4)
\$200,000 or more	1.0 (0.7-1.2)	1.0 (0.7-1.2)	1.0 (0.8-1.2)	1.2 (0.9-1.6)

^a Odds ratios are from multiple logistic regression models adjusted for factors reported above in addition to gender, age, and race.

^b Mean score: 6.9±1.3 (9 questions total)

* Indicates p <0.05; ** Indicates p <0.0001; [†] Indicates marginally significant main effect (0.05 ≤ p <0.08)

The third section of the survey focused on medical students' opinion of six different health care policies, which are displayed for the nationwide sample in **Figure 2a** and UA campuses in **Figure 2b**. The majority of the national sample and UA COM students agree that medical care should be provided to all, regardless of ability to pay (87.4%, 85.5%), that the threat of malpractice lawsuits substantially increases the overall cost of healthcare (74.6%, 82.0%), and that every physician is professionally obligated to care for the uninsured and underinsured (65.5%, 56.3%). The majority of the national sample and UA students disagree with the statements "access to health care is a privilege, not a right" (74.4%, 68.1%) and "addressing health care policy issues, as important as that may be, falls outside the scope of the professional obligations of a physician" (78.7%, 79.4%). The opinion of the statement "I would favor limiting physician income in order to expand access to basic care for those currently lacking such care" was disagreed by 46.6% of the overall students, while 35.3% agree with the statement. UA students have a similar split to this statement with 45.3% disagreeing and 35.5% agreeing to limit physician income in order to expand basic care access.

Figure 2a. Overall Medical Student Opinion of Six Health Care Policies

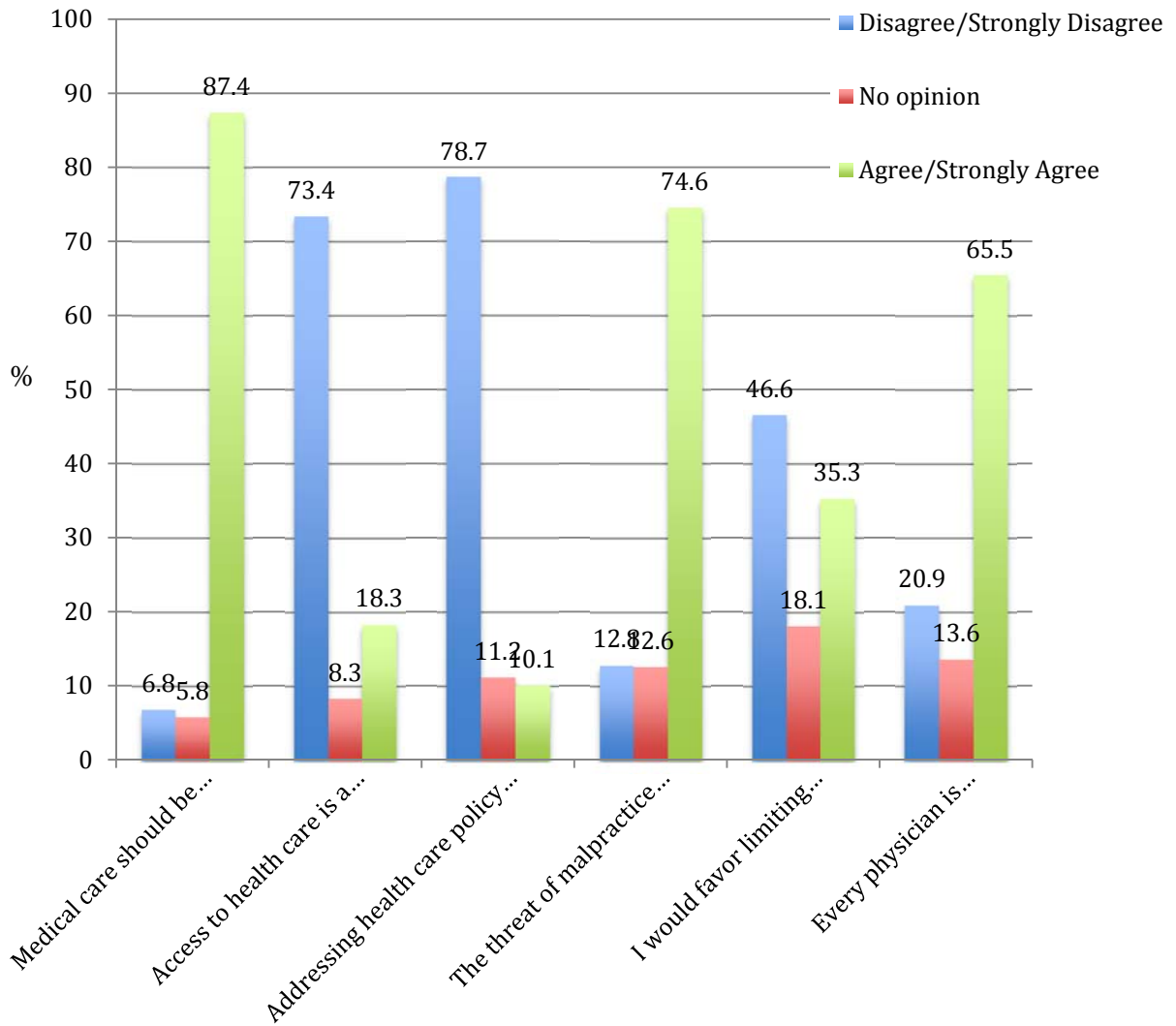
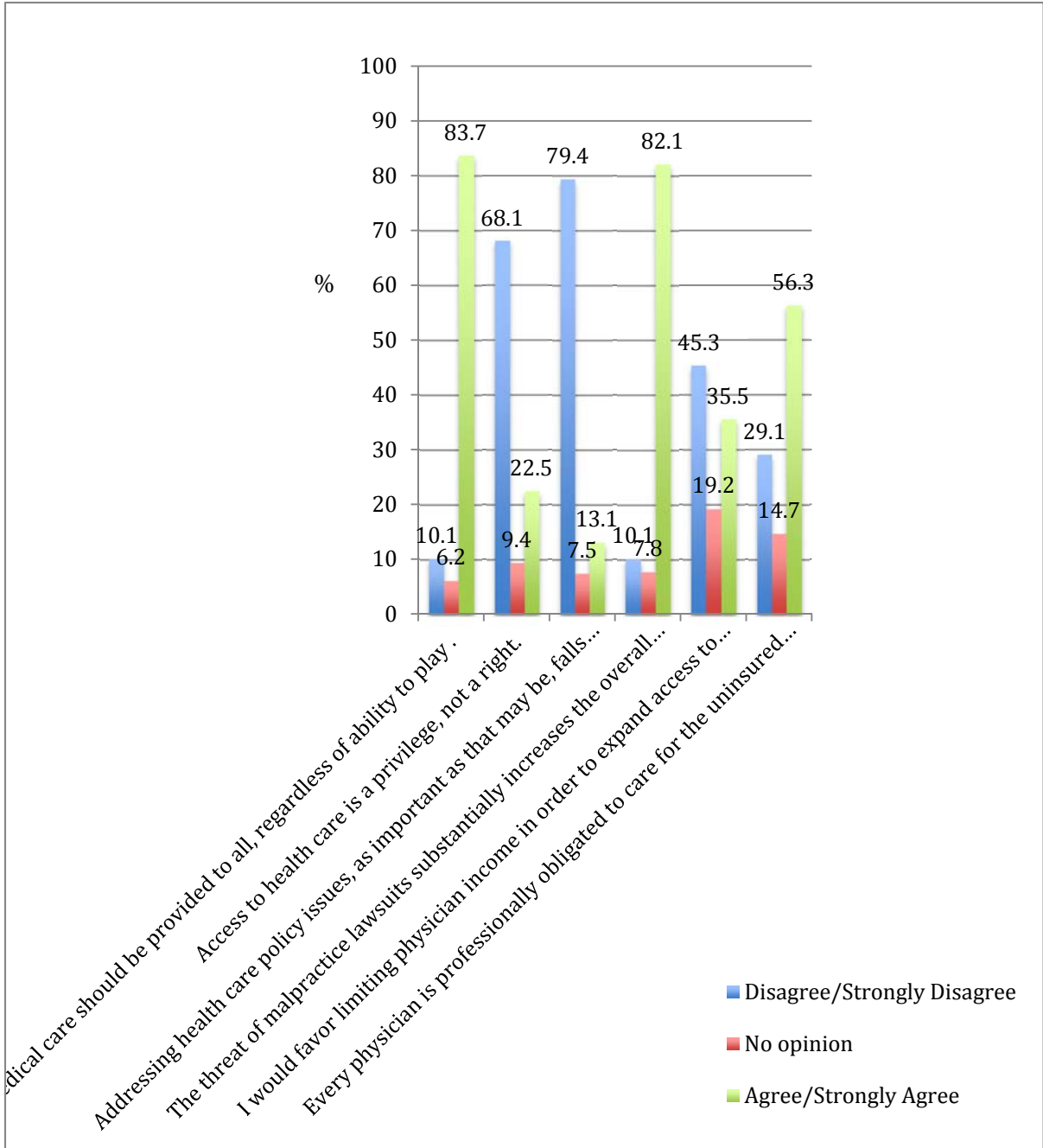


Figure 2b. UA COM-Tucson and Phoenix Medical Student Opinion of Six Health Care Policies



The fourth section asks medical students' level of agreement to seven health care policies and hypothetical situations, which are displayed for the overall survey population in **Figure 3a** and the UA students in **Figure 3b**. The majority of medical students both nationally and at the UA campuses agree that they would support expanding Medicaid coverage to provide insurance to more low-income Americans (80.7%, 79.0%), keeping children and young adults on their parents' health insurance until 26 (86.9%, 89.5%), as well as increasing payments to physicians who provide primary care (86.2%, 88.1%). A slight majority (51.0%) of the national respondents support undocumented immigrants receiving health insurance through government assistance programs, while only 45.1% of UA students agreed with this statement. The majority of both the overall students and UA students do not support allowing insurance companies to deny coverage for "pre-existing conditions" (89.5%, 86.8%). A smaller majority of the national sample and UA students support legislation that would enact a 'single-player' health care system (47.8%, 46.4%). The majority of the national sample (38.8%) disagree with the statement, "I support increasing payments to physicians who provide specialty care," while 28.2% agree and 33.0% have no opinion. There was also a relatively equal split to this statement among UA students, but the slight majority (34.9%) had no opinion, while 33.2% disagree and 31.9% agree.

Figure 3a. Overall Medical Student Level of Agreement to Seven Statements on Health Care Policies and Hypothetical Situations

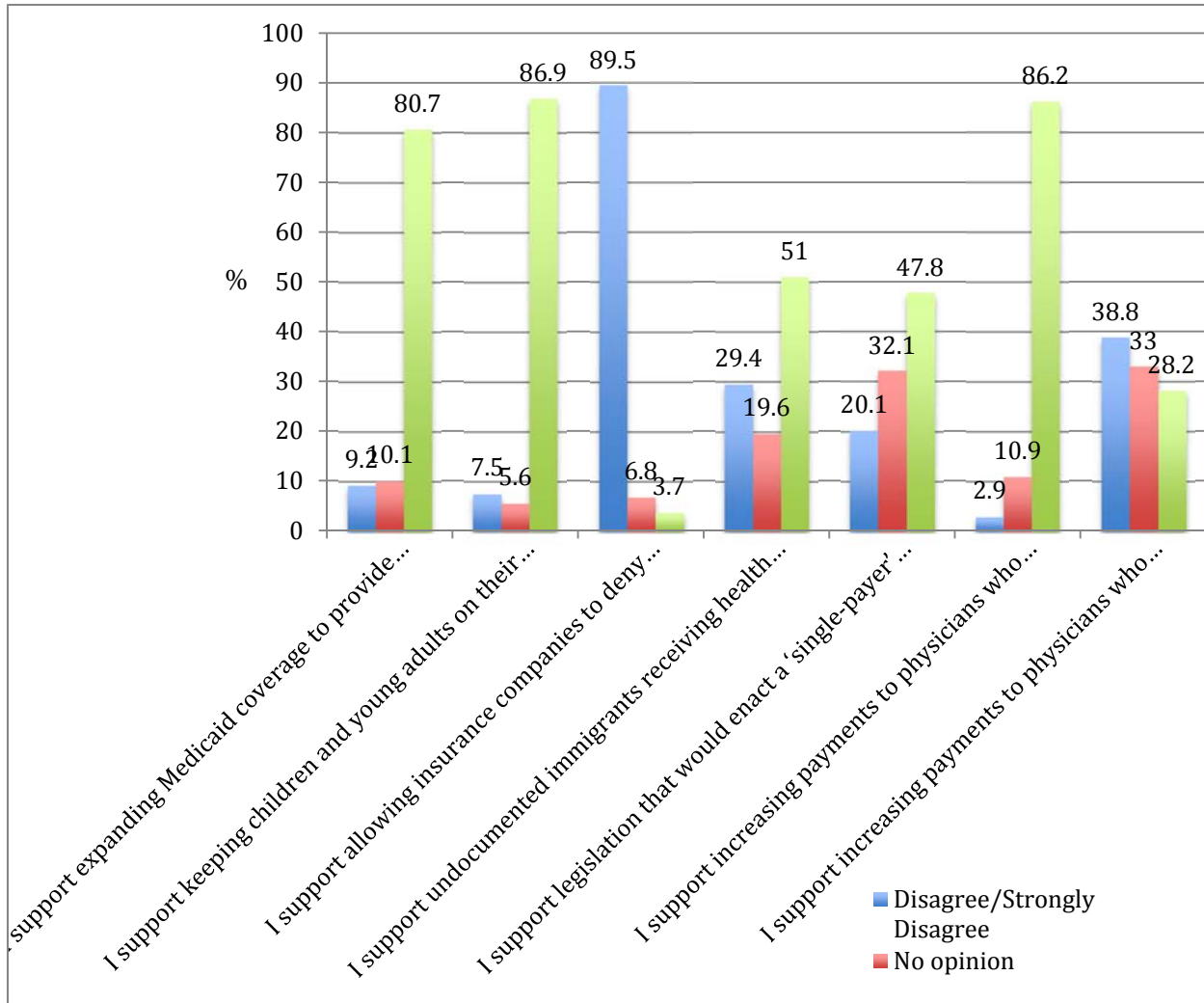
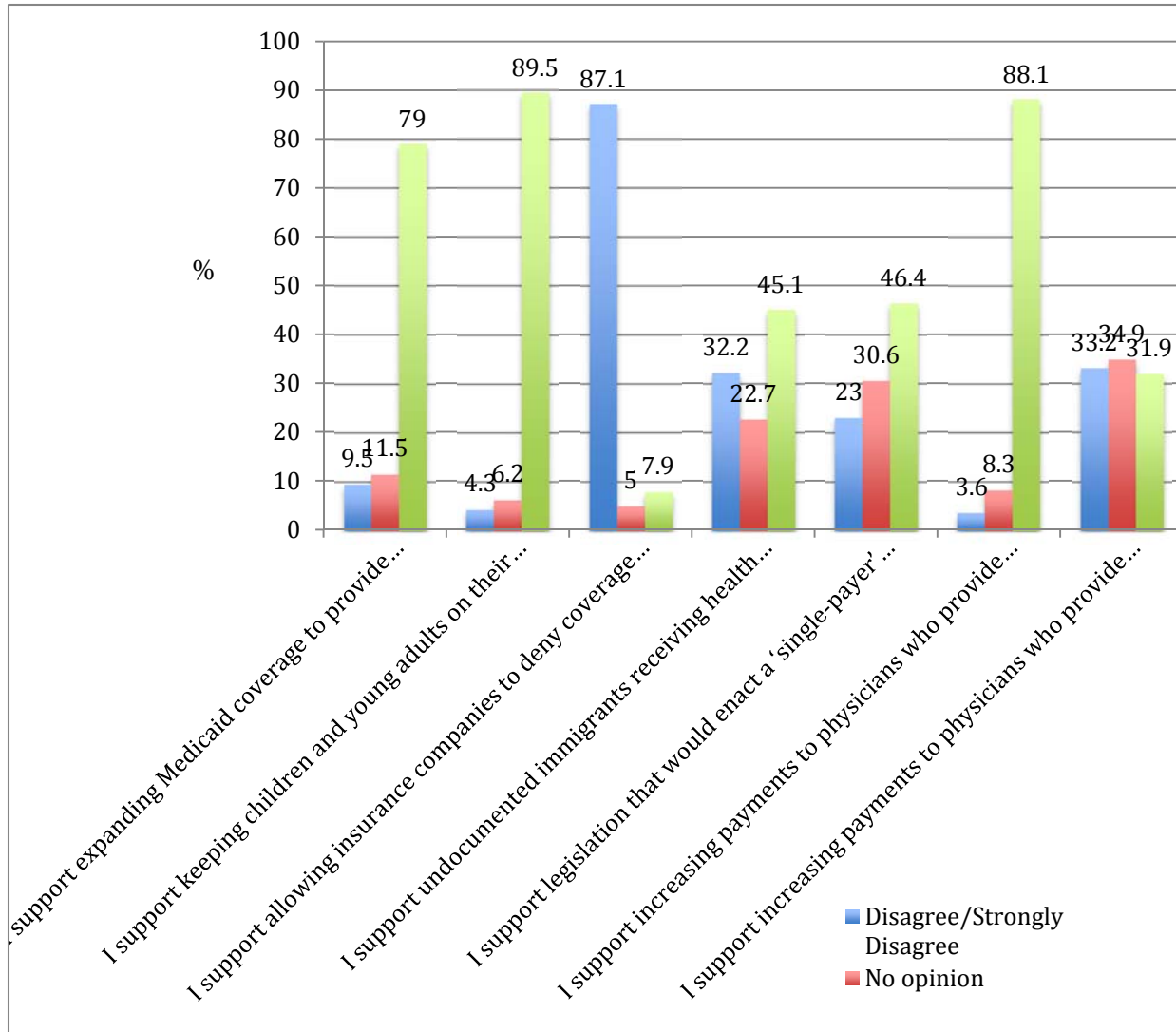


Figure 3b. UA COM-Tucson and Phoenix Medical Student Level of Agreement to Seven Statements on Health Care Policies and Hypothetical Situations



The fifth section of the survey focused on medical institution's role in health care policy education, students' political activity in medical school, as well as questions related to financial influence in future career planning, as displayed in **Figure 4a** for the overall survey respondents and **Figure 4b** for UA COM students. The vast majority of students overall and at UA COM feel health care policy topics should be included in medical education (94.8%, 94.4%), but the majority disagree that their medical education has provided adequate training in health care policy (54.1%, 58.2%). The majority of students don't believe their medical education has provided adequate advocacy education (53.2%, 51.6%), and the majority decided to not be politically active throughout medical school (57.3%, 52.6%). The majority overall and of UA medical students also agree that educational debt has or will influence their choice of specialty (52.3%, 57.9%) and that future earnings have or will influence their choice of specialty (59.4%, 62.8%).

Figure 4a. Overall Medical Student Responses to Six Questions on Health Care Policy Education, Debt Influence, and Political Activity in Medical School

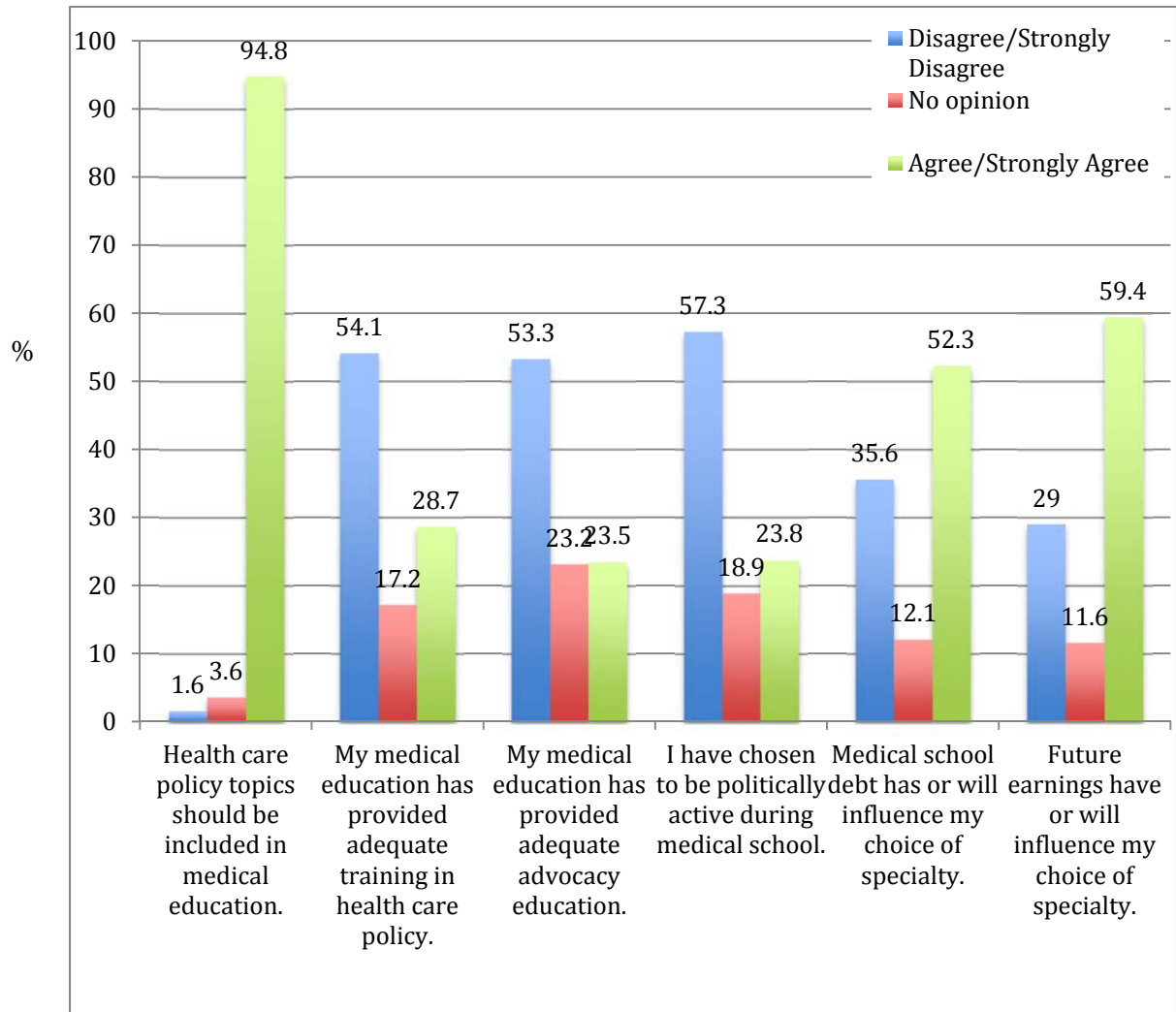
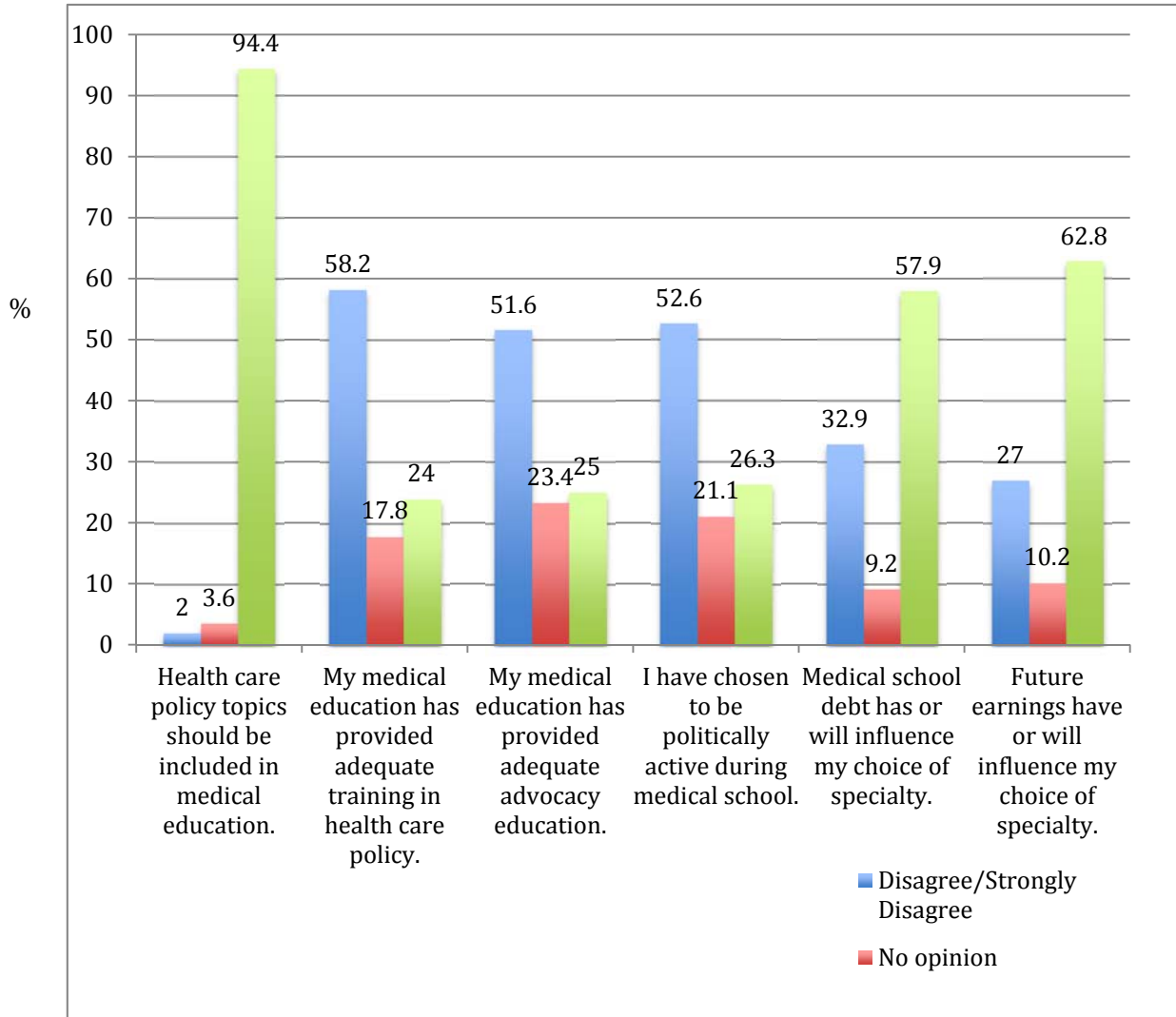


Figure 4b. UA COM-Tucson and Phoenix Medical Student Responses to Six Questions on Health Care Policy Education, Debt Influence, and Political Activity in Medical School



Discussion

Overall, there was a large amount of participation in this nationwide survey with a 51.7% completion rate. The minority of the respondents came from the second year class, which only contributed 17.1% overall. This was most likely due to the timing of the survey, as it was collected from April to June 2014, when most second year students across the county were studying for the first step of their board exams. It was surprising that fourth year medical students had such a high overall contribution to the survey at 28.6%, as they were nearing graduation or already graduated at the time of survey distribution. The Tucson campus completion rate was the lowest among the ten campuses surveyed at 34.0%, while the Phoenix campus participation was above the mean at 55.4%. This was most likely due to the investigator in charge of emailing students the survey link being a UA COM-Phoenix campus student and indicating that the study data will be used in the scholarly project, which is present at UA COM-Phoenix but not at the Tucson campus. Of note, the completion rates from the Tucson and Phoenix campuses did not include the twenty-five students who failed to indicate their specific campus at the end of the survey in the demographic section, making the completion rates slightly lower than their actual values.

It was surprising that less UA students desired to enter primary care compared to the overall respondents (35.7% vs 45.1%), as UA is a public institution and has placed a large percentage of preceding classes into primary care. UA has a high percentage of students who want to go into procedural specialties, such as radiology and anesthesia, which may be influenced by lifestyle (number of hours worked, annual salary). As a state school, UA students surprisingly had a higher percentage with anticipated debt equal to or greater than \$200,000. UA had higher percentage of UA respondents greater than thirty years of age, so the higher debt amount may be from students having families and requiring additional financial aid for support. The higher debt amount may cause people to choose a specialty outside of primary care, in order to pay off student loans more quickly, as the majority of UA students indicated that debt and future earnings will influence their specialty choice in section five (57.9%, 62.8%). These values were higher than the national sample, in which 52.3% indicated desired specialty influenced by debt and 59.4% influenced by future income.

The national study found that 63% of students support the ACA, and higher level of support came from students with above average knowledge scores, liberals and moderates, and students anticipating a primary care specialty, as seen in the multiple logistic regression model in Table 4. The overall support amongst students is much higher than physicians' support of 37%, as of October 2014 in the Kaiser Foundation survey.¹⁶ The success of health care reform will weigh heavily of the future generation of physicians, so it is a very positive sign that the majority (56%) support the ACA and also feel a professional obligation to assist in implementation. With future physician shortages predicted with the increasing amount of people insured under the Individual Mandate, we will need more primary care physicians in support of the ACA and with a desire to provide care to these individuals.²⁶ It was very nice to see that a large majority (86%) support increasing payments to primary care physicians. The incentives that the ACA has provided primary care physicians will hopefully encourage more medical students to enter the field, leading to more support of the ACA. This survey already showed a large portion of students intended to enter primary care, which will hopefully improve access to care to people, emphasizing prevention and reducing health care costs long term.

Although support of the ACA is high among future primary care physicians, students anticipating surgical subspecialties were less supportive of the legislature and were more likely to believe it will negatively impact their careers. This was anticipated, as past studies have also found that support is lower among surgeons and conservatives, when compared to primary care physicians and liberals.² Anticipated surgeons may be against the ACA because they think there may be a decrease in reimbursements for specialist under the ACA. Their mentors may also influence them at this stage in their training, and it has been well documented that practicing surgeons are more resistant to reimbursement changes compared to primary care physicians.²

In regards to the students' knowledge of the major provisions in the ACA, students felt they adequately understood the basic components of the ACA (75%), which was much higher than the Winkelman et. al. study in 2012, which had only 48% indicate basic understanding of the ACA.⁹ This increase from 2012 to 2014 may be due to recent implementation of major ACA

provisions (such as the marketplaces) and increasing media coverage. It could also be from recent medical institution implementation of health policy education in their curriculum. Overall, the majority of students knew about the most publicized provisions of the ACA, including the Individual Mandate, insurance marketplaces, prohibiting insurance companies denying coverage for pre-existing conditions, and requiring large business to provide coverage for their employees.

Even though there was a higher self-reported understanding of the ACA in this study, and above average knowledge scores were associated with higher levels of self-reporting, there was still confusion over multiple true/false questions on the ACA key provisions. Over half of the respondents believe a public option (“new government run insurance plan”) is offered on health insurance exchanges. An example of a new government run insurance plan would be if every citizen could buy a Medicaid plan, which simply is not part of the ACA. This topic did get media attention in 2010 as many physicians supported a public option on exchanges, but it was not included in the final bill signed by President Obama in March 2010.¹¹ The majority of students also believed the government is allowed to expand Medicaid in every state, but this was turned down in the Supreme Court in 2009.²⁷ The majority of students may have answered this incorrectly because nine of the ten campuses that were surveyed live in states where Medicaid expansion was passed. Only Vanderbilt University School of Medicine is in a state (Tennessee) that has not implemented Medicaid expansion to date. Either way, only twenty-nine of the fifty states have expanded Medicaid, and this lack of essential ACA knowledge demonstrates that there is a significant gap in what medical students need to know about the ACA in order to advocate effectively.

There was also nearly 30% of the national sample that thought the ACA includes an overhaul of tort reform, and nearly 40% that didn't know primary care physicians will have increased payments for two years. UA students also had poor understanding of some major ACA components, and had higher incorrect scores on the public option and Medicaid expansion questions. The UA knowledge score was lower than the national score (6.3 vs 6.9). One possible reason for this lower knowledge amongst UA COM students may have been due to a large amount of first year medical students responding to the survey, compared to upper classman

(33.5% MS1s vs 16.5% MS4s). The UA has implemented health care reform education with courses during the second half of student's fourth year, and the lower contribution from these students may have demonstrated the lack of knowledge of key ACA components. This poor understanding from both the UA students and the national sample may negatively influence the health care reform success as this generation moves forward, and emphasizes the need to expand and improve health care reform education in medical schools, starting in the first year.

Political ideology showed an important association with students' opinions regarding the ACA; as liberals and moderates were significantly more likely to support the ACA, understand its components, agree with a professional obligation for ACA implementation, and disagree that the ACA will negatively impact their careers when compared to students who identified themselves as conservative. The majority of students self-reported that they were liberal (57.6%) or moderate (21.2%), meaning more future physicians will likely support the ACA and want to aid in its implementation as liberal doctors.

It was interesting to see a lack of association between ACA support and level of educational debt or medical school year in the regression model. Debt amount has or will influence the majority of students' specialties, so it might be thought that more student debt will cause them to choose a surgical or procedural specialty with higher potential reimbursements, thus leading to lower support for the ACA. It could also be hypothesized that first year students would have a different level of ACA understanding and support than fourth year students, as opinions change as students get more experience in the health care system and learn more about policy and reform throughout medical school. These two assumptions turned out to be false in this survey to over 2700 students.

In the third and fourth sections of the survey addressing health care policies, it was interesting to find UA students don't support undocumented immigrants receiving health insurance through government assistance programs as much as the national sample (45.1% vs 51%). UA has a slightly larger percentage of Hispanic students (6.9% vs 5.7%), but it may be that UA students see first hand how much undocumented immigrants cost the health care system during their third and fourth year clerkships. Many of the hospitals in southern Arizona that UA students rotate at have large undocumented patient populations without health care

insurance, and after extensive workups and treatment plans, the hospital and tax payers are often stuck eating a large amount of the cost. Even though 68% of UA students believe health care is a right rather than a privilege and 84% believe medical care should be provided to all regardless of ability to pay, many UA students (29.1%) do not feel professionally obligated to care for the uninsured or underinsured, and the majority (45.3%) would not favor limiting physician income in order to expand access to basic care for those currently lacking it. This is a concerning finding as most students feel everyone should have the right to medical care, but many feel they are not obligated to care for undocumented immigrants or underinsured.

Medical students do not feel adequately educated from their medical institutions on health care policies, as over 94% of students feel they should be taught health care policy topics in their curricula, but only 28.8% feel they are adequately trained on health care policy. In order for health care reform to be successful, we must adequately educate students on reform, advocacy, and leadership. Unfortunately, the majority of medical students who responded have chosen to not be politically active in medical school (57.3%), and the majority of students have or will let debt and future earnings play a role in the future specialty choice. Fortunately, many students are planning on going into primary care and the vast majority of students who responded supported increasing payments to physicians who provide primary care (88.1%). With the ACA making primary care more lucrative with increased reimbursement in the future, the percentage of students entering primary care may be on the rise, which will aid in reform. Reform efforts need the next generation of physicians to be advocates in order to be successful, which starts in the medical school classroom through policy and advocacy education.

This survey has limitations in that it is not randomized and does not have an equal amount of public and private institutions (seven versus three). It does geographically represent a broad range of medical schools and the diversity fits the national averages according to the AAMC in 2014,²³ but the demographics are unknown of the students who did not respond. We also use the term “primary care” to represent internal medicine, Internal medicine/pediatrics (med-peds), pediatrics, family medicine, and emergency medicine. One can argue that emergency medicine can be placed in the “procedural specialty” category, but one can also argue that many patients in the ED are not true emergencies and often have primary care

issues. One could also argue that most internal medicine residents decide to do additional fellowship training in areas like cardiology, hematology/oncology, and so on. Although this is true, we included a section in Intended Specialty where students could write in their desired specialty. If they wrote a specific specialty, we placed it into the category as mentioned in the Methods section. An example was interventional cardiology, which was placed into the procedural specialty category. This allowed us to assume that a large amount of the sample that desire to enter internal medicine, med-peds, pediatrics, family medicine, or emergency medicine will actually go into a primary care position. It is important to also note that many first, second, and third year medical students change their intended specialty once they get experience in different medical fields. Although this is true, there is no way we could account for this error, unless we only surveyed fourth students post-match, which would bring up many other biases.

Future Directions

The national results focusing on the four opinion questions, true/false knowledge questions, and the multiple logistic regression model are currently in press in *The Journal of General Internal Medicine (JGIM)* by Tyler Winkelman, MD, and the research team. There will be an additional paper on the survey section focused on medical institution's role on health care reform and policy education, with a goal to publish in a peer-reviewed journal in summer 2015. A publication of this data hopes to aid in the development of targeted educational efforts within medical school curricula to address deficiencies that may be highlighted in our study. I will be working with Tyler Winkelman, MD, from the University of Minnesota and Lisa Lehmann, MD, PhD from Harvard University, and we will use Chi-square tests and multiple logistic regression models to find associations between the fifth section of the survey and key predictors.

I also plan on meeting with faculty at the UA COM-Phoenix to discuss ways to improve our health care reform and policy curriculum. We currently get multiple lectures in the latter half of our fourth year on health care reform, Medicaid, Medicare, advocacy and health care costs. These are phenomenal lectures and extremely important for students, but I hope to help implement lectures earlier in medical school. I also wish to introduce students to *The Health care Handbook*, which was written by two medical students from Washington University Medical School in St. Louis in 2012 and recently released an updated second version.¹⁰ This book provides a simple and neutral overview of our health care system and the ACA, allowing students to build a foundation early in medical school, before they enter the hospital in third year clerkships.

Conclusions

With the Affordable Care Act in the first year of implementation, it is vital to the success of health care reform for today's medical students to be familiar with the details of the document and be willing to aid in reform efforts.^{7,8,18} There has been inadequate data to date that assesses medical students' knowledge and opinion of the ACA, which allows this study to be unique and show the health care community the present stance and intelligence future physicians have in regards to health care policies. We found that the majority of students who responded to this survey supported the ACA (63%), agree that they have a professional obligation to implement the legislature (56%), and believe they have a good understanding of the basic ACA components (75%). Students who identified themselves as liberal or moderate, and those intending to go into primary care, were associated with higher levels of ACA understanding of, support for, professional obligation toward, and positive expectations of the ACA when compared to students identifying themselves as conservative or entering surgery or surgical subspecialty. This support by primary care physicians may brighten future reform success.

When assessing student's knowledge of key provisions, we did find confusion regarding Medicaid expansion among states and a public option among insurance exchanges. This confusion and lack of knowledge of key ACA components may stem from student ignorance to learn the ACA provisions and may also be from inadequate health care policy education in medical institution curricula.^{20,21} The University of Arizona College of Medicine students had very similar data to the national results. With potential future changes made to medical institutions' curricula on health policy education and the large percentage of students who support the ACA, especially among students anticipating primary care, there is optimism that future physicians can achieve successful health care reform.

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