

## Supplemental Digital Appendix 2

### Comparison of Attitudes of Year 1-2 and Year 3-4 Medical Students toward Cost-Conscious Care and Perceived Barriers to and Consequences of Cost-Conscious Care, 2015 Survey of Students at 10 U.S. Medical Schools<sup>a</sup>

	Year 1–2 students (n = 1453)		Year 3–4 students (n = 1431)		<i>P</i> value
	Moderately or strongly agree, n (%) <sup>b</sup>	Respondents, n	Moderately or strongly agree, n (%) <sup>c</sup>	Respondents, n	
<b>Attitudes toward cost-conscious care</b>					
Physician clinical practices (e.g., ordering, prescribing) are key drivers of high health care costs	936 (65)	1,430	871 (61)	1,422	.05
Trying to contain costs is the responsibility of every physician	1,272 (89)	1,430	1,296 (91)	1,419	.07
Physicians should take a more prominent role in limiting use of unnecessary tests	1,383 (96)	1,436	1,378 (96)	1,428	.84
Physicians should be aware of the costs of the tests or treatments they recommend	1,394 (97)	1,435	1,392 (98)	1,427	.65
Cost to society should be important in physician decisions to use or not to use an intervention	981 (69)	1,426	1,013 (71)	1,421	.22
Managing health care resources for <i>all</i> patients is compatible with physicians' obligation to serve <i>individual</i> patients	1,136 (80)	1,425	1,143 (80)	1,420	.67
The cost of a test or medication is only important if the patient has to pay for it out of pocket	233 (16)	1,427	149 (10)	1,421	< .001
It is unfair to ask physicians to be cost-conscious and still keep the welfare of their patients foremost in their minds	461 (32)	1,425	388 (27)	1,421	.008

(Appendix continues)

	Year 1–2 students (n = 1453)		Year 3–4 students (n = 1431)		<i>P</i> value
	Moderately or strongly agree, n (%) <sup>b</sup>	Respondents, n	Moderately or strongly agree, n (%) <sup>c</sup>	Respondents, n	
Physicians should talk to patients about the costs of care when discussing treatment options	1,353 (94)	1,433	1,242 (87)	1,422	< .001
Physicians should provide tests or treatments if a patient requests them	411 (29)	1,432	163 (11)	1,424	< .001
Cost-effectiveness data should be used to determine what treatments are offered to patients	998 (70)	1,423	963 (68)	1,417	.30
Physicians should try not to think about the cost to the health care system when making treatment decisions	332 (23)	1,436	286 (20)	1,423	.08
Physicians should change their clinical practices (e.g., ordering, prescribing) if the cost of care they provide is higher than colleagues who care for similar patients	1,042 (73)	1,431	1,043 (73)	1,422	.81
<b>Barriers to cost-conscious care</b>					
Doctors are too busy to worry about the costs of tests and procedures	454 (32)	1,426	505 (36)	1,421	.07
It is easy to determine how much tests and procedures cost	210 (15)	1,416	110 (8)	1,420	< .001
It is easier to order a test than to explain to the patient why a particular test is unnecessary	624 (44)	1,432	726 (51)	1,425	< .001
The organizational culture I am training in makes it difficult for doctors to address costs of care <sup>d</sup>	560 (39)	1,424	796 (56)	1,425	< .001

(Appendix continues)

	Year 1–2 students (n = 1453)		Year 3-4 students (n = 1431)		<i>P</i> value
	Moderately or strongly agree, n (%) <sup>b</sup>	Respondents, n	Moderately or strongly agree, n (%) <sup>c</sup>	Respondents, n	
<b>Consequences of cost-conscious care</b>					
Eliminating unnecessary tests and procedures will improve patient safety	1,304 (91)	1,430	1,319 (93)	1,423	.22
Spending more money on health care leads to better health outcomes	207 (14)	1,430	134 (9)	1,420	< .001
Ordering fewer tests and procedures will increase physicians' risk of medical malpractice litigation	839 (59)	1,427	800 (56)	1,420	.59
Patients will be less satisfied with the care they receive from physicians who discuss costs when choosing tests and treatments	309 (22)	1,427	353 (25)	1,418	.07
Practicing cost-conscious care will undermine patients' trust in physicians	242 (17)	1,429	226 (16)	1,420	.59

<sup>a</sup>Excluding data from respondents who selected “other” when asked to report their year of training and from respondents who did not report their year of training. For these items, students were asked to indicate their extent of agreement on a four-point Likert scale (1 = strongly disagree, 2 = moderately disagree, 3 = moderately agree, 4 = strongly agree); data in table are dichotomized as moderately/strongly agree vs. moderately/strongly disagree

<sup>b</sup>Percentages are not all based on a denominator of 1,453 because of missing responses to some survey items

<sup>c</sup>Percentages are not all based on a denominator 1,431 because of missing responses to some survey items

<sup>d</sup>Students were instructed to consider the institution(s) affiliated with their medical school when responding to this item.

## Supplemental Digital Appendix 3

### Comparison of Reported Exposure Among Year 1-2 and Year 3-4 Medical Students to Physician Role-Modeling Behaviors Related to Cost-Conscious Care, 2015 Survey of Students at 10 U.S. Medical Schools<sup>a</sup>

	Year 1–2 students (n = 1,453)	Respondents, n	Year 3–4 students (n = 1,431)	Respondents, n	<i>P</i> value
	Observed behavior one or more times in last year, n (%) <sup>b</sup>		Observed behavior one or more times in last year, n (%) <sup>c</sup>		
Cost-conscious role-modeling behaviors					
Seek cost-effectiveness data to inform their clinical decision-making	1,087 (76)	1,434	1,276 (89)	1,427	< .001
Initiate a conversation about costs of care when discussing treatment options	1,191 (83)	1,430	1,320 (93)	1,420	< .001
Explain to a patient why a particular diagnostic test is not necessary	1,196 (84)	1,427	1,412 (99)	1,425	< .001
Discuss costs of care with students or other members of the health care team when making patient care decisions	1,171 (82)	1,427	1,374 (96)	1,424	< .001
Ask a student or other member of the health care team to explain how a test result will affect patient management	1,042 (73)	1,424	1,375 (97)	1,418	< .001
Praise a student or resident for ordering a cost-effective diagnostic work-up	512 (36)	1,411	1,067 (75)	1,423	< .001
Point out examples of waste in the health care system	1,187 (83)	1,430	1,372 (96)	1,424	< .001

(Appendix continues)

	Year 1–2 students (n = 1,453)	Year 3–4 students (n = 1,431)		<i>P</i> value	
	Observed behavior one or more times in last year, n (%) <sup>b</sup>	Respondents, n	Observed behavior one or more times in last year, n (%) <sup>c</sup>		Respondents, n
<b>Potentially wasteful role-modeling behaviors</b>					
Refer a patient to a specialist because the patient wants it even when the physician does not believe a referral is indicated	708 (50)	1,425	1,161 (82)	1,423	< .001
Prescribe a brand name drug when an equivalent generic is available because a patient asks for the brand name drug specifically	540 (38)	1423	800 (56)	1,424	< .001
Order a more expensive test or treatment because a patient requests it even if it offers only a small potential benefit compared to less costly alternatives	631 (44)	1,425	1,002 (70)	1,422	< .001
Order numerous tests all at once rather than waiting to see the results of initial screening tests first	829 (58)	1,428	1,313 (93)	1,418	< .001
Repeat tests rather than attempt to obtain recently performed test results (e.g., by requesting a patient's outside records)	765 (54)	1,423	1,290 (91)	1,422	< .001
Criticize a student or resident for failing to order routine daily labs on a stable hospitalized patient	353 (25)	1,417	843 (59)	1,421	< .001

<sup>a</sup>Excluding data from respondents who selected “other” when asked to report their year of training and from respondents who did not report their year of training. For role-modeling survey items, students were asked to indicate how often in the preceding year they had observed a physician perform a given behavior using a four-point Likert scale of 0 = never, 1 = rarely (1–2 times), 2 = sometimes (3–5 times), 3 = often (6 or more times); data in table are dichotomized as never vs. rarely/sometimes/often.

<sup>b</sup>Percentage calculations are not all based on a denominator of 1,453 because of missing responses to some survey items.

<sup>c</sup>Percentage calculations are not all based on a denominator of 1431 because of missing responses to some survey items.