



Published in final edited form as:

JAMA Intern Med. 2016 August 01; 176(8): 1219–1221. doi:10.1001/jamainternmed.2016.2936.

Patient and Physician Attitudes on Low Value Diagnostic Tests

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To the Editor

Many American physicians think unnecessary tests and procedures are a significant problem facing our health care system, but 53% order unnecessary tests if requested by patients.¹

This discrepancy between appropriate and actual care suggests that patients' perceptions of good care are not aligned with physicians' commitment to care that optimizes quality while reducing unnecessary interventions. We assessed patients' and physicians' perceptions of high value care.

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Additional Contributions: We thank the patients and physicians who participated in the study. We are grateful to Susan Edgman-Levitan, PA, John D. Stoeckle Center for Primary Care Innovation at Massachusetts General Hospital, Boston, Massachusetts, Beverly Woo, MD, Department of Medicine, Brigham and Women's Hospital, Boston, and Daniel Solomon, MD, MPH, Department of Medicine, Brigham and Women's Hospital, Boston for helpful feedback on survey development and distribution and Bob Glynn, ScD, PhD Department of Biostatistics, Brigham and Women's Hospital, Boston, for statistical support. None of these individuals received compensation for their assistance.

Disclaimer: The content is solely the responsibility of the authors and does not represent the official views of the Veterans Health Administration, the National Center for Ethics in Health Care, the U.S. Government, Harvard Catalyst, Harvard University and its affiliated academic healthcare centers, or the National Institutes of Health.

Other disclosures: None

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Statistical analysis: Warner, Maurer, Soleymani Lehmann.

Obtained funding: Warner, Morse, Soleymani Lehmann.

Administrative, technical or material support: Warner, Shah, Morse, Lehmann, Soleymani Lehmann.

Study supervision: Shah, Morse, Soleymani Lehmann.

Author Contributions: Ms Warner and Dr Lehmann had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Conflict of Interest Disclosures: The authors have no financial relationships with any organizations that might have an interest in the submitted work and no other relationships or activities that could appear to have influenced the submitted work.

Methods

We conducted a cross-sectional survey of patients and physicians from three academic primary care clinics in the Northeastern United States. Eligible patients had a clinic appointment, could read English and complete a survey independently. Patients received a self-administered paper survey and were given a \$5 gift card or parking validation. Physicians completed an electronic survey and could enter a \$50 gift card lottery. This study was approved by Partners HealthCare Human Research Committee.

Our surveys contained novel questions asking physicians and patients to rate the care provided in two clinical vignettes based on the Choosing Wisely Initiative². Questions were pilot tested for face validity and reliable interpretation. Respondents rated the care in each part of the vignette on a five-point scale from 'poor' to 'excellent'.^{2,3}

The first vignette described a man with a headache who is worried about a brain tumor and requests a CT scan. Initially, he is diagnosed with a tension headache by his primary care physician (PCP) and told that imaging is not warranted. In part 2, the PCP informs him of the risks of CT scans. In part 3, the patient seeks a second opinion from another doctor who orders a CT scan.

The second vignette described a woman with Upper Respiratory Infection (URI) symptoms requesting antibiotics. Initially, her PCP does not prescribe antibiotics, diagnosing her with a viral infection. In part 2, the PCP refers to guidelines that recommend against antibiotics for viral infections.⁴

We assessed differences in responses between physicians and patients using the Pearson χ^2 test and Fisher's exact test.² We used SAS (version 9.3, SAS Institute) and considered $P < 0.05$ statistically significant.

Results

The response rate was 69% (218/318) among patients and 53% (151/283) among physicians (Table 1).⁵ In both vignettes, physicians were significantly more likely than patients to rate the care in a manner consistent with national guidelines ($P < 0.05$). However, providing information about the risks associated with CT scans and URI treatment guidelines increased the proportion of patients who gave a high rating to the appropriate care by 15% (Table 2).

Discussion

We found a significant discrepancy between what PCPs and patients view as high value care for headaches and URIs. Importantly, this gap significantly narrowed when physicians expressed concern for patients' well-being by referencing the harms of radiation and national guidelines that base care on evidence.

While most physicians agreed with national guidelines, 19% in the headache vignette and 5% in the URI vignette disagreed that unwarranted interventions were low value. Physicians

over-order tests due to malpractice concern and “just to be safe.”¹ Fear of missing an important diagnosis may explain why fewer physicians (81%) felt that denying the CT scan, as compared with denying antibiotics (95%), represented high value care. Malpractice reform may be essential to helping physicians feel more comfortable practicing high value medicine. The academic setting and social desirability bias may limit generalization of our results.

Even though some providers may perceive benefits to ordering diagnostic tests to alleviate patients’ concern, evidence suggests that these tests do not alleviate patient anxiety.⁶ However, patient satisfaction is correlated with physicians ordering tests patients ask for.⁷ Aligning doctors and patients views of high value care is an important way to push back against the perception that more testing is better care.

Acknowledgments

Funding/Support: Ana Sofia Warner was supported by a grant from the Harvard Medical School Center for Primary Care. Lisa Soleymani Lehmann was supported by Brigham and Women’s Hospital Department of Medicine. This work was conducted with support from Harvard Catalyst | The Harvard Clinical and Translational Science Center (National Center for Research Resources and the National Center for Advancing Translational Sciences, National Institutes of Health Award UL1 TR001102) and financial contributions from Harvard University and its affiliated academic healthcare centers.

Role of the Funder/Sponsors: None of the funders had any specific role in the design and conduct of the study; in the collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

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Table 1.

Patient and Physician Characteristics.

Patients^a			
Characteristic	Respondents (N =203)^b	Non-respondents (N=17)^c	P value
	<i>number (percent)</i>		
Female sex	127 (63)	12 (71)	0.79 ^d
Race^e			
White	125 (63)	10 (59)	0.82 ^d
Black	43 (21)	4 (24)	0.76 ^f
Hispanic	18 (9)	3 (18)	0.21 ^f
Asian	8 (4)	0	>0.99 ^f
Other	6 (3)	0	>0.99 ^f
Unknown	3 (1)	0	>0.99 ^f
Age 55 years	102 (50)	12 (70)	0.13 ^d
Education college degree	118 (58)	6 (35)	0.06 ^d
Primary language: English	183 (91)	16 (94)	0.67 ^d
Rating of own health as 'very good' or 'excellent' ^g	87 (43)	7 (41)	0.87 ^d
Physicians			
Characteristic	Respondents (N = 151)	Non-respondents (N = 132)	
Male Sex	80 (53)		
Graduated from medical school in 2000 or later	35 (29)		
20 or more hours per week spent in a clinical setting	52 (42)		

^aAll the patients who responded to the survey were at a primary care clinic at the time of a visit.

^bThe number of respondents varied between 199 and 203 as some respondents did not answer all questions.

^cOf the 100 non-respondents, 17 agreed to answer only the demographics questions contained in the survey.

^d χ^2 Squared test.

^eRace or ethnic group was self-reported on the survey. Respondents could choose more than one category.

^fFisher exact test.

^gPatients were asked to rate their own health on a 5-item scale from 'poor' to 'excellent.'

Table 2.Patient and Physician Ratings of ‘Very Good’ or ‘Excellent’ Care in Vignettes.^a

Vignette	Patients (n =203) ^b		Physicians (N= 151)		P value
	N	% (95% CI)	N	% (95% CI)	
Headache: patient A has a headache and is worried about brain cancer, asks PCP for CT scan					
Part 1: PCP does not recommend or order a CT	72	36 (29.5–42.9)	123	81 (74.3–87.3)	<0.001
Part 2: PCP explains potential harms of CT radiation exposure	103	51 (44.3–58.2)	96	64 (56.7–72.1)	0.01
Part 3: patient A seeks a second opinion from a different doctor who orders a CT scan	60	30 (23.5–36.2)	8	5 (1.7–8.9)	<0.001
Upper respiratory infection: patient B has a runny nose, headaches, no fever and asks PCP for antibiotics					
Part 1: PCP does not prescribe antibiotics	132	66 (59.1–72.2)	143	95 (92.0–98.7)	<0.001
Part 2: PCP explains American Academy of Family Physician guidelines, which do not recommend antibiotics for sinus infections	161	81 (75.0–86.0)	143	95 (91.1, 98.3)	<0.001

Abbreviation: CT, computed tomography; PCP, primary care physician

^a Respondents were asked to rate care provided by the doctor in each vignette on a 5-item scale from ‘poor’ to ‘excellent’. Values reported are number and percentage rating care as ‘very good’ or ‘excellent’, except part 3 of the headache vignette, which we divided into ‘good/very good/excellent’

^b The number of respondents varied between 199 and 203 as some respondents did not answer all questions.