



Medical imaging costs: How much do residents know?

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Disclosures:

None

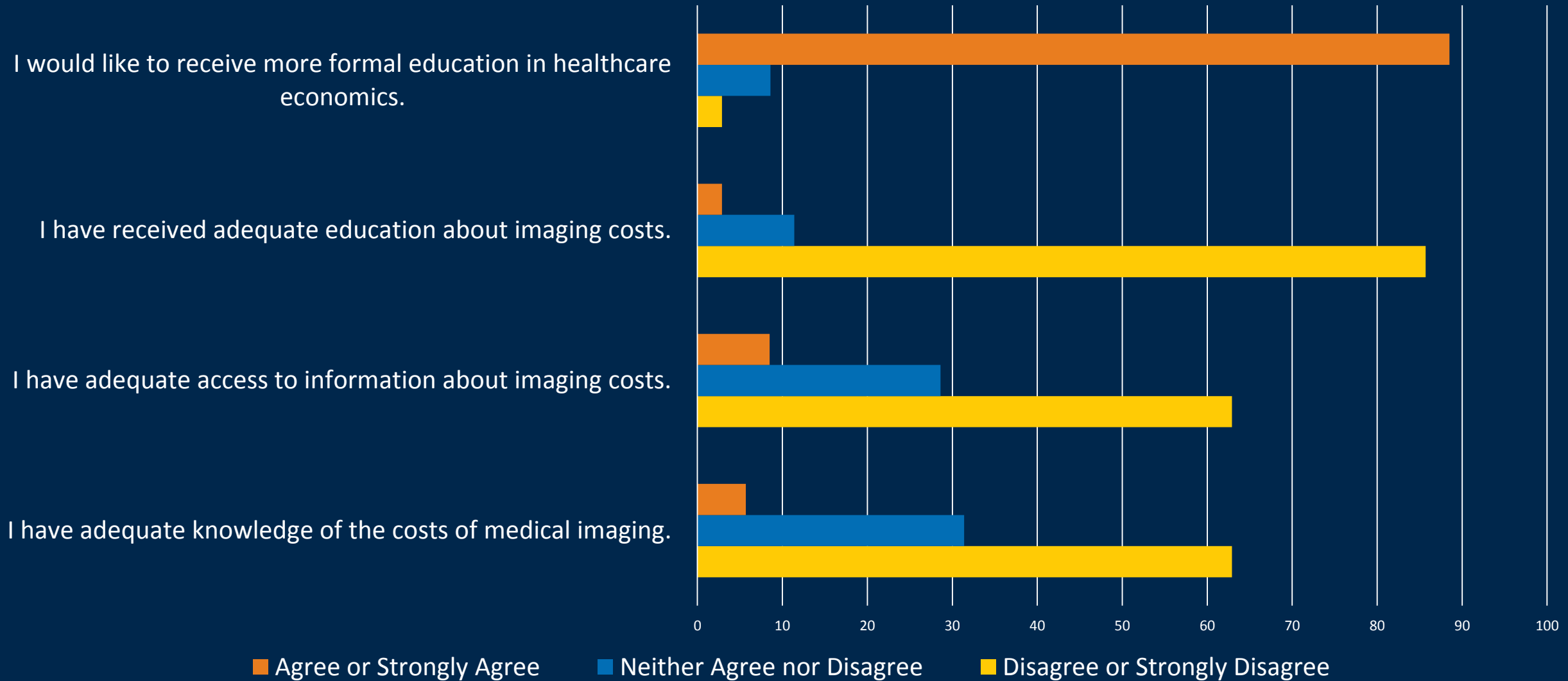
Background and Purpose

- Background:
 - Healthcare costs in the United States are enormous (\$3.2 trillion, or 17.8% of GDP in 2015) and rising, and diagnostic imaging is a significant contributor to healthcare spending.
 - Physicians control or influence up to 60% of healthcare spending
 - Radiologists play an important role in appropriate utilization of healthcare resources
 - However, lack of basic healthcare economics knowledge and teaching in radiology residencies
- Purpose:
 - The purpose of this study is to evaluate the knowledge of diagnostic radiology residents at our institution regarding the costs of common imaging studies and to assess their perceptions of their education on imaging costs and healthcare economics.

Materials/Methods

- 2016 Survey sent to diagnostic and interventional radiology residents at our institution to gauge the following:
 - Self-perception of knowledge of imaging costs
 - Access to cost information
 - Perception on current education on imaging costs
 - Desire to receive more formal education in healthcare economics
 - Knowledge of Medicare-allowable fees for 10 commonly performed imaging examinations

Results



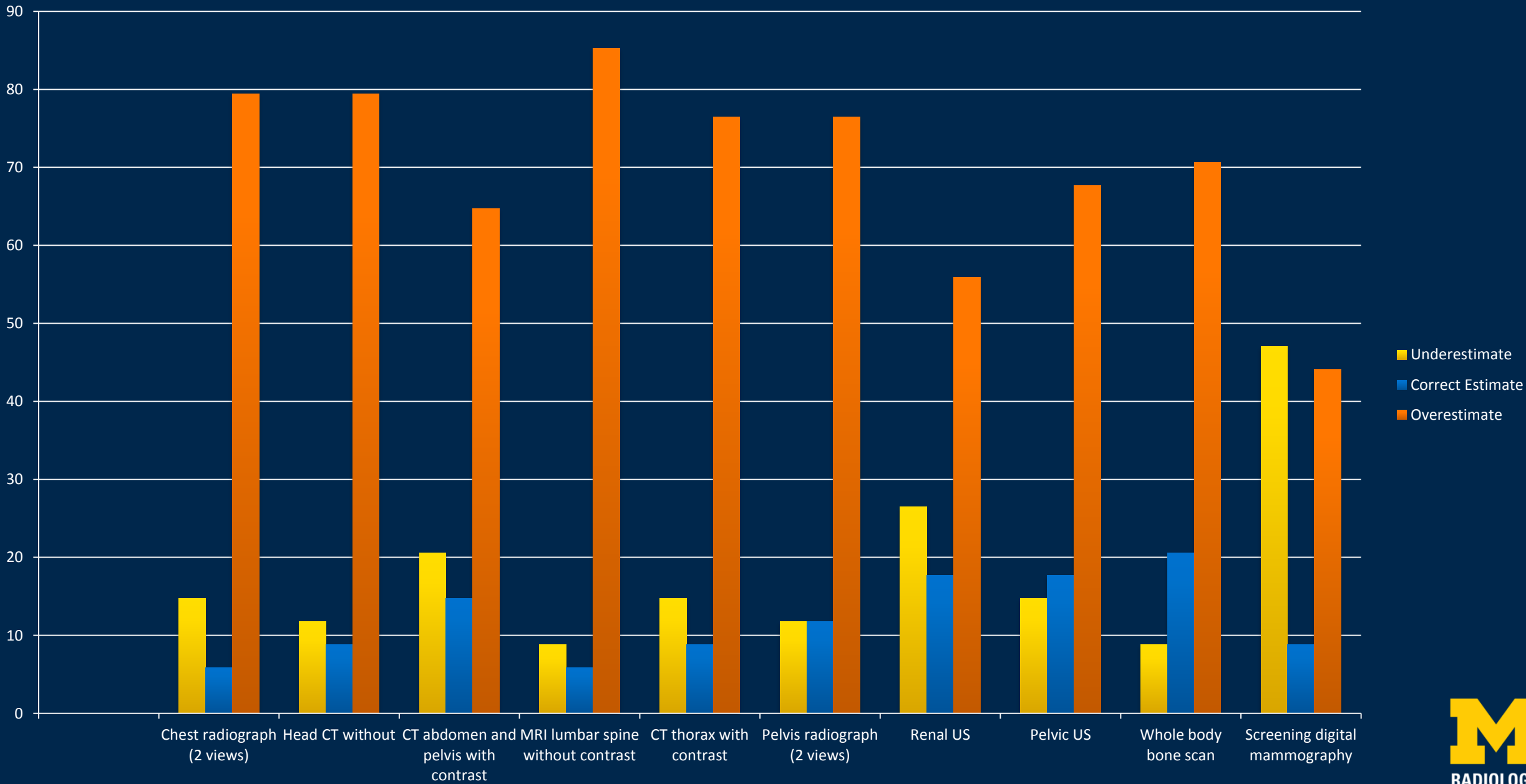
Results

Diagnostic Imaging Study	CMS Actual Allowable Total Fee*	Range of Estimates
Chest radiograph (2 views)	\$27.93	\$5-500
Head CT without	\$117.08	\$20-1500
CT abdomen and pelvis with contrast	\$313.29	\$20-3000
MRI lumbar spine without contrast	\$224.49	\$100-5000
CT thorax with contrast	\$230.94	\$20-1500
Pelvis radiograph (2 views)	\$31.87	\$5-500
Renal US	\$114.93	\$5-2000
Pelvic US	\$111.35	\$5-2500
Whole body bone scan	\$263.16	\$10-6000
Screening digital mammography	\$134.98	\$3-1500

*CMS total fee = technical + professional component



Results



Results Summary

- 35 of 43 residents (81.4%) returned complete surveys
- 5.7% of residents considered their knowledge of imaging costs adequate
- 2.9% thought that they had received adequate education about imaging costs
- 88.5% of residents expressed interest in more formal education in healthcare economics
- Regarding estimations of imaging costs, only 12.1% of all estimates were correct, 70.0% were overestimations, and 17.9% were underestimations. Knowledge of imaging costs did not improve with advancing years of training.

Radiology trainees are not alone in lack of cost awareness...

- Exit survey of senior residents at Yale-New Haven Hospital
 - 25% accurate in cost of common lab and imaging tests (accurate if between 50-200%)
- Multicenter survey of 189 emergency physicians
 - 17% accurate in cost estimations of labs, drugs, imaging, EMS services, and medical visits (within +/- 25%)
- Multicenter survey of 1,090 IRs and VSs
 - 19.8% accurate in cost estimations of devices +/- 25%
 - 22.8% accurate in Medicare reimbursement +/- 25%
 - 31.9% accurate in wRVUs for procedures +/- 25%
- Single-center Survey of 138 pediatricians
 - 15% of faculty and 11% of residents able to state the cost of several common tests, medications, and services within SD +/- 25%
- Multicenter survey of 503 orthopedic surgeons
 - 21% of faculty and 17% of residents able to state cost of commonly implanted devices within +/- 20%

Improving Resident Education in Healthcare Economics

- Focus on relative costs, ACR Appropriateness Criteria
- Know approximate CMS payments for common imaging studies
- Include cost information in clinical decision support systems and electronic health record systems
- Utilize local resources such as business school and university affiliations for guests lectures
- Residency specific electives
 - Healthcare Administration Scholars Program at University of Michigan
- Radiology Leadership Institute of the American College of Radiology

Summary and Conclusions

- Radiologists play a key role in controlling healthcare costs
- However, radiology residents at our institution have little knowledge of costs of common imaging studies, indicating a weakness in residency training on basic healthcare economics.
- Residents have expressed a strong interest in more formal education.
- There is ample opportunity to improve our education in regards to basic healthcare economics and imaging costs, to enable residents to direct cost effective care.

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Thank You