Robot-Assisted Versus Open Radical Prostatectomy: A Contemporary Analysis of an All-Payer Discharge Database

Quoc-Dien Trinh, MD FACS
Assistant Professor of Surgery, Harvard Medical School
Co-Director, Dana-Farber/Brigham and Women's Prostate Cancer Center
@qdtrinh

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Disclosures

- **Funding**: Vattikuti Urology Institute, Prostate Cancer Foundation, Conquer Cancer Foundation of the American Society of Clinical Oncology, National Institutes of Health (1R03CA205018-01)

- I'm just a **urologist**

- I perform **robot-assisted radical prostatectomy**

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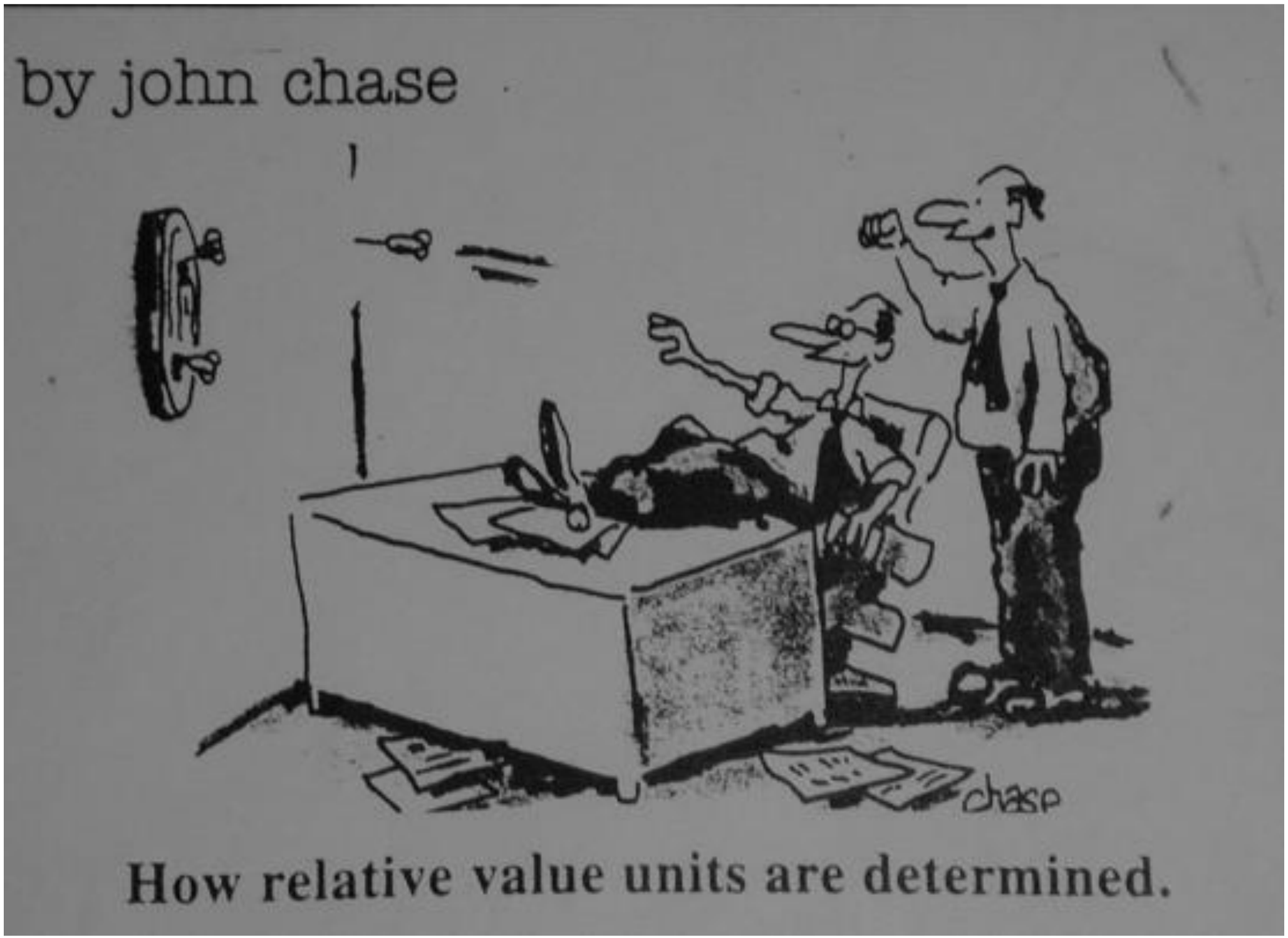

How relative value units are determined.

What Is A **Relative Value Unit?**

- A **Relative Value Unit** (RVU) is a measure of value used in the Medicare reimbursement formula for physician services

- Before RVUs were used, Medicare paid physician services using "**usual, customary and reasonable**" rate-setting

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Basics of the RVU system

Vol. 319 No. 13 ESTIMATING PHYSICIANS' WORK — HSIAO ET AL. 835

SPECIAL ARTICLE

ESTIMATING PHYSICIANS' WORK FOR A RESOURCE-BASED RELATIVE-VALUE SCALE

WILLIAM C. HSIAO, PH.D., PETER BRAUN, M.D., DOUWE YNTEMA, PH.D., AND EDMUND R. BECKER, PH.D.

Abstract We have developed a resource-based relative-value scale as an alternative to the system of payment based on charges for physicians' services. Resource inputs by physicians include (1) total work input performed by the physician for each service; (2) practice costs, including malpractice premiums; and (3) the cost of specialty training. These factors were combined to produce a relative-value scale denominated in nonmonetary units. We describe here the process by which the physician's work was defined and estimated. The study asked two questions: What is the physician's work for each service performed? and Can work be estimated reliably and validly? We concluded that a physician's work has four major dimensions: time, mental effort and judgment, technical skill and physical effort, and psychological stress.

We found that physicians can rate the relative amount of work of the services within their specialty directly, taking into account all the dimensions of work. Moreover, these ratings are highly reproducible, consistent, and therefore probably valid. (N Engl J Med 1988; 319:835-41.)

- Each service in the fee schedule is scored under the Resource-Based Relative Value (RBRV) Scale to determine a payment
- RBRVS developed at Harvard University (Hsiao et al) 1985-1988
- George H. W. Bush signed into law the Omnibus Budget Reconciliation Act, switching Medicare to RBRVS payment schedule effective Jan. 1, 1992

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FIGURE

How a CPT code's Medicare allowable is determined*

CMS

Adjustments for Geographical Practice Cost Index

RUC

Work RVU
▪ time ▪ technical skill ▪ effort ▪ judgment ▪ stress on doctor, etc.

48.3% average weight
[Example: 0.97]

+

Practice Expense RVU
▪ use of nonclinical personnel ▪ office space ▪ supplies, etc.

47.4% average weight
[Example: 1.10]

+

Professional Liability Insurance RVU

4.3% average weight
[Example: 0.07]

= **RVU**
[Example: 2.14]

CMS

RVU x CMS Conversion Factor ($34.0230 for 2013) = Medicare Payment
[Example: 2.14 x $34.0230 = $72.81]

Abbreviations: **CMS** = Centers for Medicare & Medicaid Services **RUC** = American Medical Association (AMA)/Specialty Society Relative Value Scale Update Committee **RVU** = Relative Value Unit

*Example based on CPT code 99213

Source: American Medical Association

CMS Conversion factor $35.7751 for 2017

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CPT Editorial Panel
or CMS Requests

Level of Interest

Survey

Specialty RVS
Committee

The RUC

CMS

Medicare Payment
Schedule

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What is the Survey?

- Societies need help to assure relative values will be accurately and fairly presented to the CMS
- **Purpose of the survey**
  - To obtain estimates of the time and complexity required in performing a procedure
  - To obtain estimate of a recommended professional work value

What is the RUC?

- AMA advocates for fair and accurate valuation for all physician services within the **Resource-Based Relative Value Scale**

- To ensure that physician services across all specialties are well-represented, the AMA established the **AMA/Specialty Society Relative Value Scale Update Committee** (RUC)

- The RUC makes recommendations regarding valuation for new and revised CPT codes to CMS

the National Survey of the Time Required for Selected Services with Actual H

SERVICE	NATIONAL SURVEY ESTIMATES	OPERATING ROOM TIME
	mean minutes	
Decompression of carpal tunnel in a 48-year-old woman, unilateral, ambulatory surgery unit	30.5	25.2
Carotid endarterectomy, unilateral, in a 58-year-old woman with a history of transient ischemic attacks	99.4	91.0
Transurethral resection of prostate, medium-sized gland for benign prostatic hypertrophy in a 70-year-old man	64.6	56.4
Abdominal hysterectomy for cancer in situ of cervix in a 50-year-old woman	91.9	96.6
Diagnostic dilation and curettage for menometrorrhagia in a 50-year-old woman	13.9	8.8
Primary total hip replacement for osteoarthritis	135.1	145.6
Modified radical mastectomy	109.4	106.8
Primary triple-vessel coronary-artery bypass graft, in a 65-year-old man, ejection fraction = 50 percent, with no complicating associated disease	202.1	194.7

*Extremely high and low outliers were deleted. Outliers were defined as time values that differed by more than three standard deviations from the mean of the remaining values.

We found that physicians can rate the relative amount of work of the services within their specialty directly, taking into account all the dimensions of work. Moreover, these ratings are highly reproducible, consistent, and therefore probably valid. (N Engl J Med 1988; 319:835-41.)

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CMS Releases Proposed Rule for the 2017 Physician Fee Schedule

Facility

CPT Code [1]	Description	2017 Proposed Physician Work RVUs	2017 Proposed Facility PE RVUs	2017 Proposed Mal-Practice RVUs	2017 Proposed Total Facility RVUs	Facility Payment with 2016 CF[2]	Facility Payment with Proposed 2017 CF[3]	% Change using 2016 CF versus 2017 CF
52000	Cystoscopy	1.53	1.23	0.18	2.94	$129.97	$105.18	-19.1%
52240	Cystoscopy and treatment of large bladder tumor	7.50	3.05	0.83	11.38	$404.59	$407.12	0.6%
52332	Cystoscopy with stent insertion	2.82	1.38	0.31	4.51	$160.40	$161.35	0.6%
52353	Cystouretero w/lithotripsy	7.50	3.05	0.83	11.38	$404.59	$407.12	0.6%
52648	Laser vaporization of prostate (PVP)	12.15	6.46	1.35	19.96	$710.36	$714.07	0.5%
55250	Removal of sperm duct(s)	3.37	2.82	0.39	6.58	$233.44	$235.40	0.8%
55866	Laparoscopic radical prostatectomy with robotics	21.36	10.16	2.33	33.85	$1,442.91	$1,210.99	-16.1%
57288	Repair bladder defect (sling)	12.13	6.87	1.37	20.37	$728.26	$728.74	0.1%
99204	Office/outpatient visit new	2.43	1.02	0.21	3.66	$131.40	$130.94	-0.4%
99213	Office/outpatient visit est	0.97	0.40	0.07	1.44	$51.56	$51.52	-0.1%

1. CPT codes and descriptions are copyright 2016 American Medical Association. All Rights Reserved. Applicable FARS/DFARS apply.

2. Payments based on the 2016 final conversion factor of 35.8043.

3. Payment based on the 2017 proposed conversion factor of 35.7751

***Source:** Medicare Program; Revisions to Payment Policies under the Physician Fee Schedule and Other Revisions to Part B for CY 2016*

Addendum B – Relative Value Units and Related Information Used in CY 2017 Proposed Rule

The payment rates are national rates and do not reflect the 2 percent payment reduction required by the sequestration or payment adjustments based on geographical locations.

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- Adjustments to relative values must be made in a **budget neutral** manner, which means that any reductions in payments for any services found to be misvalued must go into payments for all other services

- That said, actual impact of total Medicare revenues on an individual urology practice will differ based on annual changes in RVUs, **patient volume and mix of services**

- **CMS adopted the 21.36 interim work RVU based on an independent analysis of the robotic procedure compared to an open prostatectomy (55840)**

AUA, LUGPA Present to CMS Refinement Panel

- **CMS' decision was not in alignment with the work value recommended by the AMA RUC**

- According to CMS, the agency had performed an independent review of the code, comparing the robotic procedure with the open prostatectomy code

- The AUA, LUGPA **presented new available data** to support the RUC-recommended work values and shared important information on the differences in technique for laparoscopic radical prostatectomy as compared to the open procedure

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available at www.sciencedirect.com
journal homepage: www.europeanurology.com

European Association of Urology

Prostate Cancer

Robot-assisted Versus Open Radical Prostatectomy: A Contemporary Analysis of an All-payer Discharge Database

Jeffrey J. Leow[a,b,†], *Steven L. Chang*[a,c,†], *Christian P. Meyer*[a], *Ye Wang*[a], *Julian Hanske*[a], *Jesse D. Sammon*[d], *Alexander P. Cole*[c], *Mark A. Preston*[c], *Prokar Dasgupta*[e], *Mani Menon*[d], *Benjamin I. Chung*[f], *Quoc-Dien Trinh*[a,c,*]

[a] *Center for Surgery and Public Health, Brigham and Women's Hospital, Boston, MA, USA;* [b] *Department of Urology, Tan Tock Seng Hospital, Singapore;* [c] *Division of Urology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA;* [d] *VUI Center for Outcomes Research Analytics and Evaluation (VCORE), Henry Ford Health System, Detroit, MI, USA;* [e] *Department of Urology, King's College London, Guy's and St. Thomas' Hospitals NHS Foundation Trust, Guy's Hospital, London, UK;* [f] *Department of Urology, Stanford University Medical Center, Stanford, CA, USA*

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- Premier Hospital Database is a nationally representative all-payer database capturing more than 45 million hospital inpatient discharges, representing approximately 20% of all hospitalizations in the USA

- Patients who had a code for a robot-assisted procedure (ICD-9 code 17.42 or 17.44, introduced in October 2008) or a recorded charge code for robotic instrumentation were classified as RARP

- **These charge codes were obtained via a thorough review of the charge description master (CDM) to specifically identify supplies unique to robotic procedures by flagging every item in the EndoWrist Instrument and Accessory Catalog from Intuitive Surgical and performing a manual review**

Platinum Priority – Prostate Cancer
Editorial by Joshua J. Meeks and James A. Eastham on pp. 686–687 of this issue

Perioperative Outcomes of Robot-Assisted Radical Prostatectomy Compared With Open Radical Prostatectomy: Results From the Nationwide Inpatient Sample

Quoc-Dien Trinh[a,b,1,], Jesse Sammon[a,1], Maxine Sun[b], Praful Ravi[c], Khurshid R. Ghani[a], Marco Bianchi[d], Wooju Jeong[a], Shahrokh F. Shariat[e], Jens Hansen[f], Jan Schmitges[f], Claudio Jeldres[b], Craig G. Rogers[a], James O. Peabody[a], Francesco Montorsi[d], Mani Menon[a], Pierre I. Karakiewicz[b]*

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VOLUME 32 · NUMBER 14 · MAY 10 2014
JOURNAL OF CLINICAL ONCOLOGY ORIGINAL REPORT

Comparative Effectiveness of Robot-Assisted and Open Radical Prostatectomy in the Postdissemination Era

Giorgio Gandaglia, Jesse D. Sammon, Steven L. Chang, Toni K. Choueiri, Jim C. Hu, Pierre I. Karakiewicz, Adam S. Kibel, Simon P. Kim, Ramdev Konijeti, Francesco Montorsi, Paul L. Nguyen, Shyam Sukumar, Mani Menon, Maxine Sun, and Quoc-Dien Trinh

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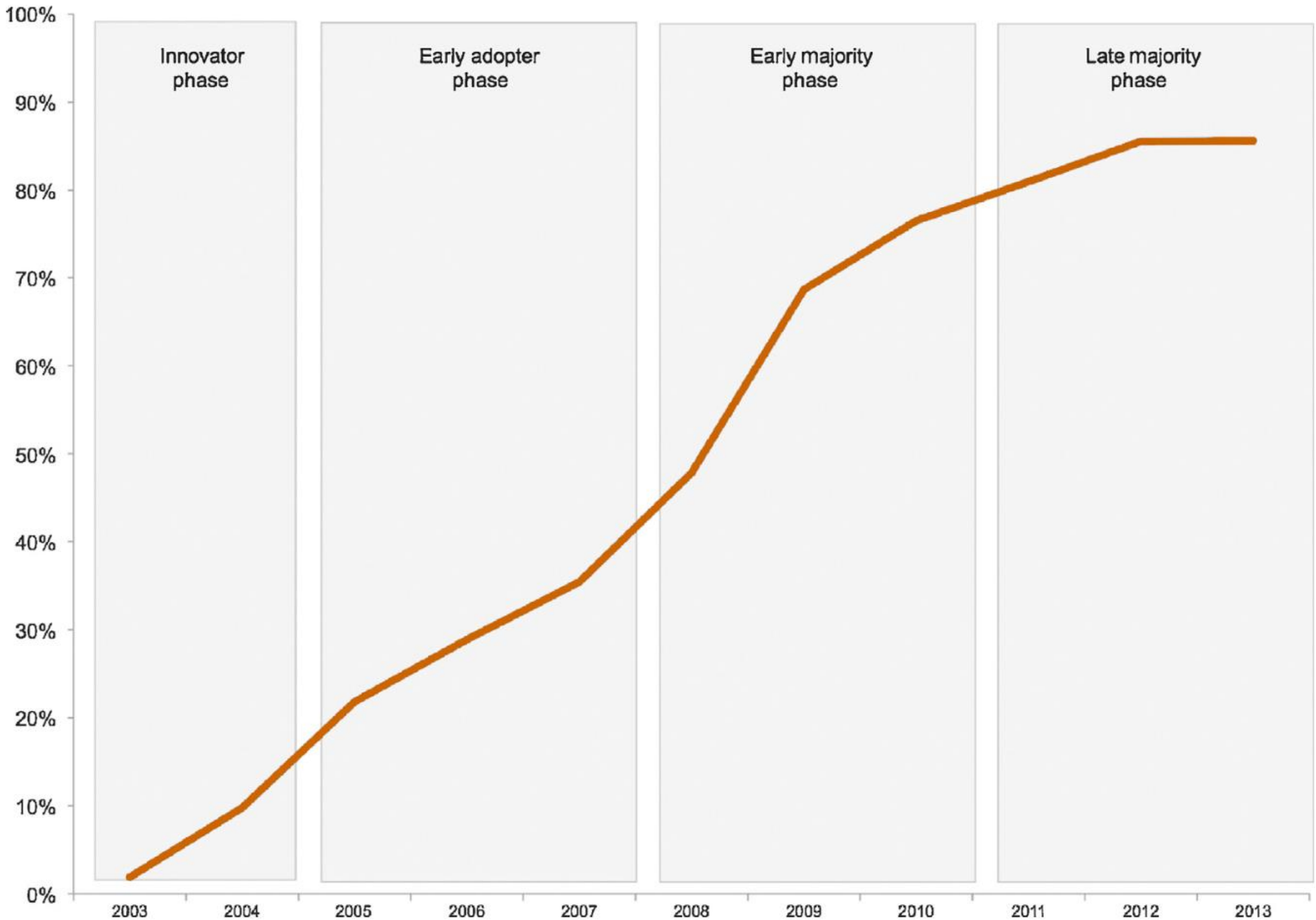
of **robot-assisted radical prostatectomy** in the USA from 2003 t



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pen radical prostatectomy (ORP) versus robot-assisted radi

	ORP	RARP	*p* value
Complications (%)			0.43
None	89.4	89.9	
Minor (Clavien 1–2)	9.5	8.9	
Major (Clavien 3–5)	1	1.1	
Any (Clavien 1–5)	10.6	10.1	0.04
Blood transfusion (%)			<0.001
No	97.1	99.7	
Yes	2.9	0.3	
Operating room time (min)			0.05
Mean (95% CI)	219 (180–257)	309 (211–406)	
LOS (d)			
Mean (95% CI)	2.95 (2.83–3.07)	1.71 (1.58–1.84)	<0.001
Median (IQR)	3 (2–3)	1 (1–2)	<0.001
pLOS (%)	56.1	13.3	<0.001
90-d DHC (2014 US$)			
Mean (95% CI)	10190 (9639–10 742)	12297 (10641–13 952)	0.02
Median (IQR)	9070 (7077–11 880)	11311 (8688–14 853)	<0.001

LOS = length of stay; pLOS = prolonged LOS (stay exceeding the median for the entire cohort); CI = confidence interval; IQR = interquartile range; DHC = direct hospital costs.

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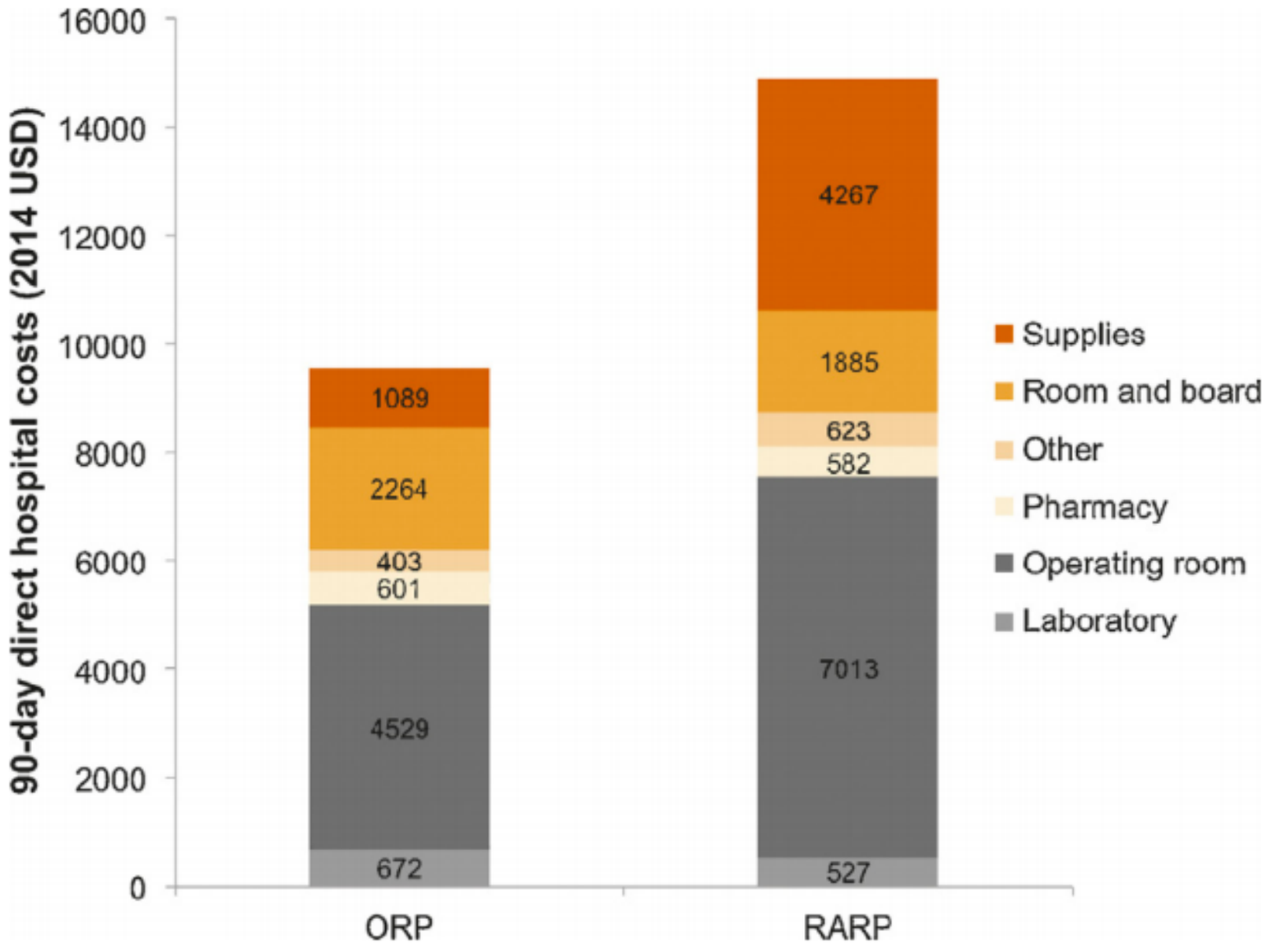
Adjusted cost comparison of open radical prostatectomy (ORP) and robot-assisted radical prostatectomy (RARP) in the USA from 2003 To 2013, including cost breakdowns. Costs refer to 90-d direct hospital costs and were inflated to 2014 US dollars using the medical consumer price index. Other costs include combined costs for cardiology, radiology, respiratory medicine, therapy, and other items



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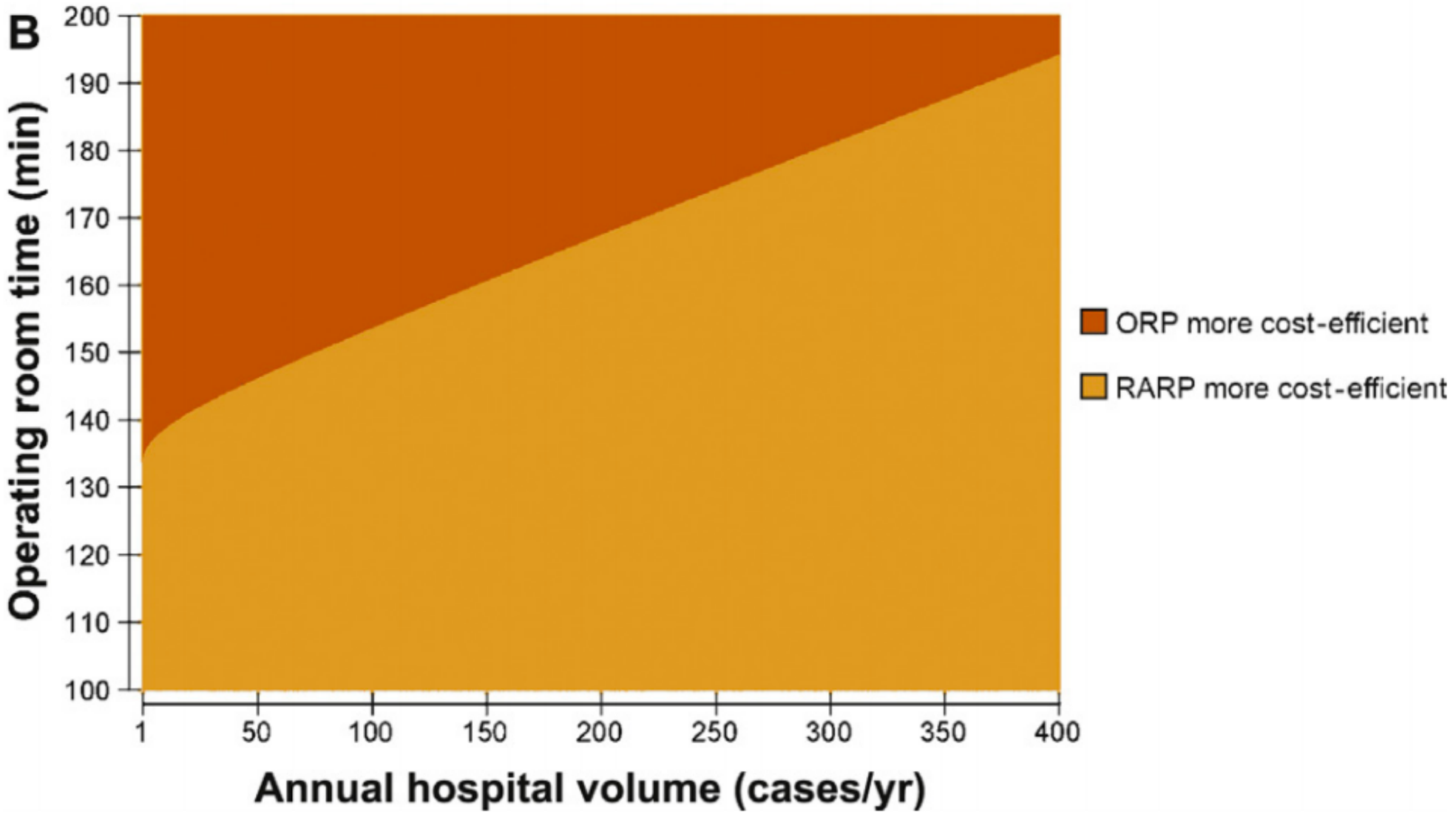
Relationship between operating room time and annual hospital volume for 90-d direct hospital costs for open radical prostatectomy (ORP) versus robot-assisted radical prostatectomy (RARP) in the USA. Light grey regions indicate the parameters for which RARP will be cheaper compared to ORP.



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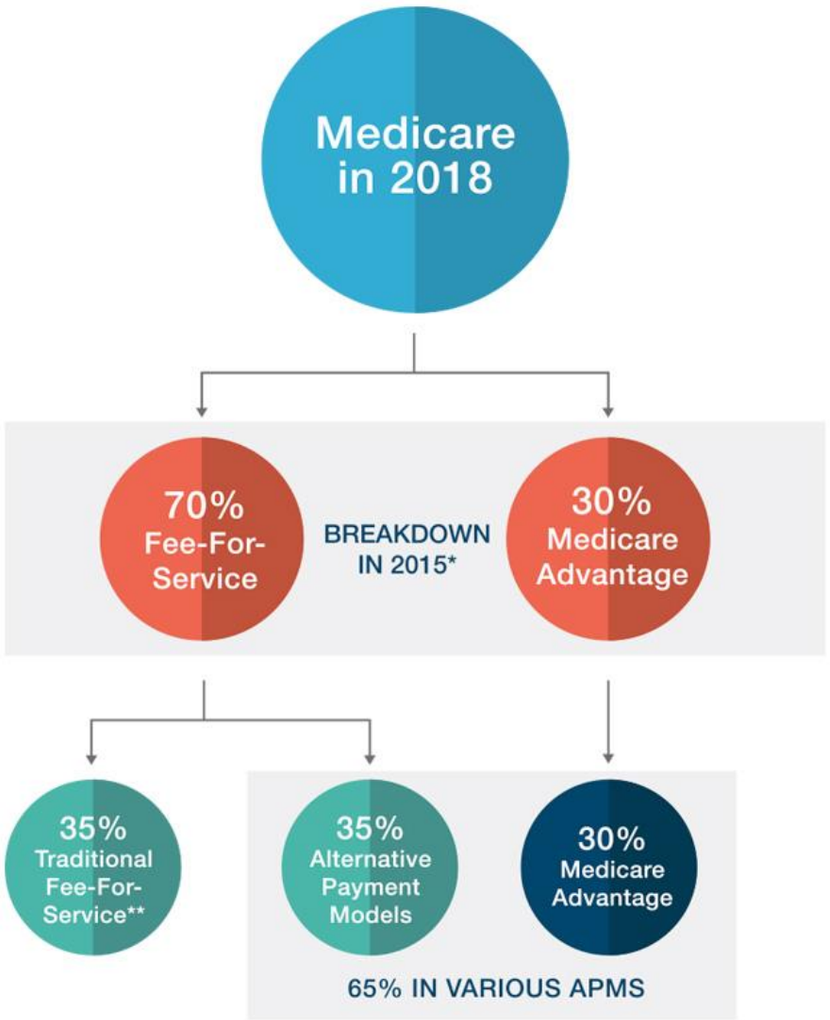
- In the agency's [CMS] comments, they cited the study, "**Robot-assisted versus Open Radical Prostatectomy: A Contemporary Analysis of an All-payer Discharge Database**" by J.J. Leow, S.L. Chang, and colleagues, […] Based on this presentation of additional clinical evidence, **we agree with the commenters that the recommended work RVU of 26.80 is a more appropriate value for this procedure**," the rule states. "After consideration of comments received, we are finalizing a work RVU of 26.80 for CPT code 55866."

Absolutely amazing QDT. I don't know how you managed to pull this off. Getting first the AUA and then CMS to listen!

Thank you.



*30% of Medicare beneficiaries currently choose MA. Since it has been growing at 10% per year (about 3 percentage points), it's likely to be greater than 30% in 2018. **Virtually all of this "traditional FFS" payment will be tied to quality in some way in 2018.

http://healthaffairs.org/blog/2016/01/14/paying-providers-for-value-the-path-forward/

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