Economics and the Clinical Physicist

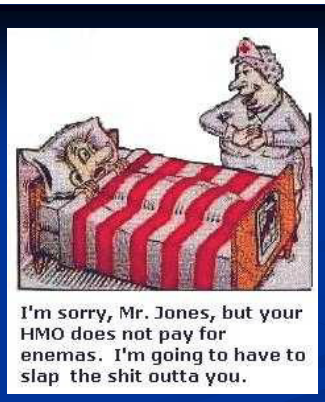
Οικονομικά and the Clinical Physicist

Contributions

- Jerry White, M.S.
  - Chair, AAPM Professional Council
  - Chair, ACR Medical Physics Economics Committee
- Jim Hevezi, Ph.D.
  - Chair, AAPM Professional Economics Committee
  - Excom., ASTRO Health Policy Committee
  - Chair, ACR Commission on Medical Physics
- AAPM Professional Economics Committee Staff
- ACR Economics Commission and ACR Economics Staff
- ASTRO Health Policy Staff

Where does the money come from?

- Government programs: Medicare, Medicaid (Centers for Medicare and Medicaid Services – CMS)
- 3rd party indemnity insurance
- 3rd party HMO, PPO, etc.
- 3rd party capitated
- Direct payment from the patient (generally ~ 3x higher cost)
- Charity



Medicare

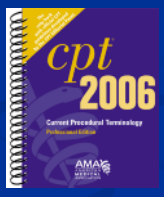
- Medicare Part A
  - Hospital Payments
- Medicare Part B
  - Physician Payments
  - Freestanding Centers

Medicare

- Medicare Part A
  - Hospital payments
    - Radiology
    - Radiation Oncology
    - Cardiology
    - Inpatient/Outpatient
- Medicare Part B
  - Physician payments
    - Physician Professional component
  - Freestanding Center payments
    - Physician Professional component
    - Technical component

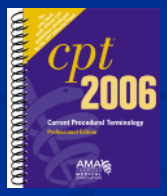
Task Descriptors

- **Current Procedural Terminology (CPT)**
- Listing of descriptive terms/identifying codes for reporting of medical services and procedures
- Published by American Medical Association
- Updated Yearly



Task Descriptors

- **Current Procedural Terminology (CPT)**
- 1st Edition - 1966
- Major Revisions: 1970, 1973, 1977
- CPT 5 Project: 1998-2002



CPT Editorial Panel

- Maintains CPT Manual
- 17 members
- Appointed by AMA Board of Trustees
- William T. Thorwarth, Jr., M.D., Radiologist CPT Panel Member & Executive Committee

17 Members

- 11 nominations by AMA
- 2 Co-Chair & Representative of Health Care Professionals Advisory Committee (HCPAC)
- 1 Blue Cross Blue Shield Association
- 1 Health Insurance Association of America
- 1 Centers for Medicare and Medicaid Services
- 1 American Hospital Association

11 Nominations by AMA

- (7) Regular Seats
  - maximum tenure of two 4-year terms
- (4) Rotating Seats
  - maximum tenure of one 4-year term

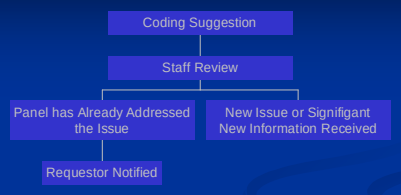
CPT Advisory Committee

- Over 100 Specialty Societies Represented
- 11 Radiology Specialty Society Advisors
- Richard Duszak, Jr., M.D.
  - ACR CPT Advisor
- Michael Steinberg, M.D.
  - ASTRO CPT Advisor

CPT Advisory Committee Member Responsibilities

- Review coding proposals and give advice
- Provide documentation on medical appropriateness
- Suggest revisions to CPT
- Review coding articles, publications and educational materials
- Educate its members on the use and benefits of CPT

How are CPT codes created?



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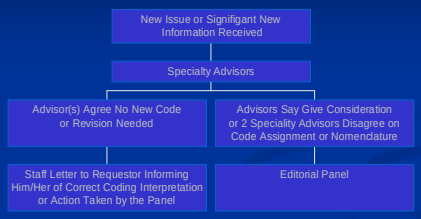

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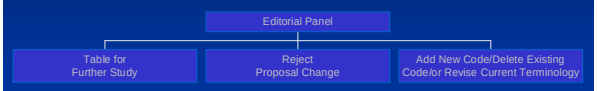


CPT Code Categories

- Category I
  - Standard codes for routine procedures
- Category II
  - Tracking codes
- Category III
  - Emerging Technology codes

CATEGORY III CODE CRITERIA

- Used for emerging technologies
- Code is not valued by the RUC, but that DOES NOT mean the service won't be reimbursed
- Coverage and payment with CMS is typically decided by local carrier unless national "non-coverage" decision or CMS national payment policy (e.g. 0073T compensator-based IMRT delivery)
- If available, must be used rather than Category I codes that approximate the procedure!
  - Category III code for compensator-based IMRT delivery (but valued by CMS with a crosswalk to 77418)

Congratulations!

- The CPT Editorial Panel has approved your code request and it will be entered into the 2008 CPT guide

Congratulations!

- The CPT Editorial Panel has approved your code request and it will be entered into the 2008 CPT guide
- Want to get paid?

Meet the RUC

Relative Value Update Committee (RUC)

- 29 members
  - 23 appointed by special societies
    - 3 rotating seats (2 internal medicine subspecialty & 1 other specialty)
  - 1 American Medical Association
  - 1 American Osteopathic Association
  - 1 Chair of the RUC
  - 1 Chair of the PEAC
  - 1 CPT Editorial Panel
  - 1 Co-Chair of Health Care Professionals Advisory Committee (HCPAC)

RUC Advisory Committee

- 109 Specialty Society Representatives
- Recommend Relative Value Units (RVUs)
- Internal specialty RVS committee
- Make recommendations to the RUC
- Manage process

Health Care Professionals Advisory Committee (HCPAC)

- Advisory committee to the RUC
- HCPAC Co-Chair seat on the RUC
- Created to provide for participation of non-physician healthcare professionals who utilize CPT codes in the RUC process
- Develops relative value unit (RVU) recommendations for new and revised CPT codes that are primarily used by non-physicians

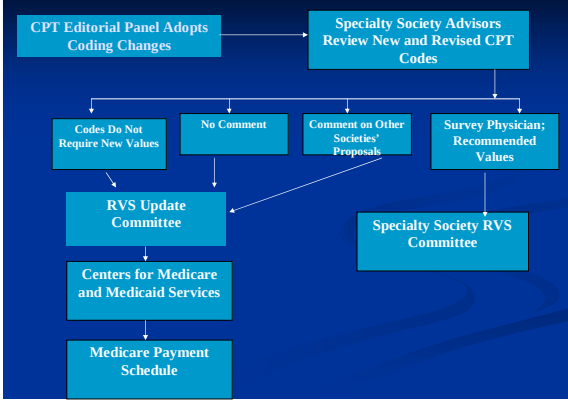
RUC Cycle

- Coordinated with CPT Editorial Panel schedule
- Required to Survey at least 30 practicing physicians
- Recommendations presented at RUC
- RUC may adopt or modify before submitting to CMS

RUC Reports

- RUC recommendations forwarded to CMS in May
- Medicare Physician Fee Schedule (includes CMS's review of RUC Recommendations) published late Fall.
- CMS accepts approx. 95% of RUC recommendations

The RUC Process



RUC Activity For 2005/06 MPFS

- Placement of breast brachytherapy radiotherapy afterloading balloon catheter (3 codes)
- PET and PET /CT (6 codes)
- Radiopharmaceutical therapy (3 codes)
- DEXA / VFA
- Stereotactic Radiosurgery Codes (delivery) (06)
- Stereotactic Body Radiation Therapy (06)

RUC Activity For 2006 MPFS

- Doppler velocitometry fetal umbilical and middle cerebral arteries (2 codes)
- Contrast injection for CVL check
- Mechanical thrombectomy (6 codes)
- Three-dimensional rendering (2 codes)
- Intracranial stenting and angioplasty (5 codes)
- Radiofrequency ablation of renal tumors
- Kyphoplasty (3 codes)
- Thoracic aortic endografts (6 codes)
- Stereotactic X-ray guidance for radiation therapy
- Neutron therapy

RUC 5 Year Review

- Mandated by CMS
- 1995, 2000 and 2005 (the current 2007 review)
- Codes recommended for review by specialty societies, CMS, others as potentially overvalued or undervalued.
- Radiation Oncology codes for current five year review:
  - 77263, 77280, 77290, 77300, 77315, 77331, 77334, 77470

CPT	Descriptor	2005 Work RVU	ASTRO Requested Work RVU	RUC Reco	CMS Proposal	2007 Proposed Work RVU
77263	Radiation therapy planning	3.14	3.14	3.14	Agree	3.14
77280	Set radiation therapy field, simple	0.70	0.70	0.70	Agree	0.70
77290	Set radiation therapy field, complex	1.56	1.56	1.56	Agree	1.56
77300	Radiation therapy dose plan	0.62	0.62	0.62	Agree	0.62
77315	Teletx isodose plan, complex	1.56	1.56	1.56	Agree	1.56
77331	Special radiation dosimetry	0.87	0.87	0.87	Agree	0.87
77334	Radiation treatment aid(s), complex	1.24	1.24	1.24	Agree	1.24
77470	Special radiation treatment	2.09	2.09	2.09	Agree	2.09

RUC 5 Year Review

- SSA requires budget neutrality adjustments if RVUs increase or decrease by more than $20 million in one year
  - CMS estimates that the proposed work RVU changes increase expenditures by approx. $4 billion
  - Significant increases in "evaluation and management" work RVUs
- CMS proposes a 10% reduction in all physician work RVUs for 2007 as the required budget neutrality adjustment

Practice Expense Advisory Committee

"The PEAC"

Practice Expense

- 1994 Congress mandated development of resource-based practice expense relative values by beginning of 1999 to replace historical charge-based system.
  - Collection of direct PE data for all medical procedures; and
  - Validation of the direct PE data

Practice Expense Categories

- Direct Expense:
  - Non-physician Clinical Labor
  - Medical Supplies
  - Medical Equipment
- Indirect Expense
  - Administrative Labor
  - Office Supplies
  - Overhead & Everything Else

Direct Expense

- The PEAC evaluates:
  - Clinical Labor (non-physician)
  - Medical Supplies
  - Medical Equipment
- Reports to the RUC and thus onward to CMS
- Relies on recommendations of Specialty Societies
- Recommendations based on surveys (at least 30 practitioners)
- Practice Expense normalized: (practice expense/hour)

Currently

- PEAC refined over 6,100 codes between April 1999 to March 2004 from a variety of specialties
- Of these, the ACR presented inputs for over 800 codes

PE Data Submitted to PEAC

Family groups that the ACR has submitted PE data include:

- CT
- MR
- Ultrasound
- Plain film
- Nuclear Medicine (ACR/SNM)
- Radiation Oncology (ACR/ASTRO)

MPFS Payment Calculation

- Resource Based Relative Value Unit Scale (RVU)
  - Physician work RVU
  - Practice expense RVU
    - PE RVUS calculated for PC and TC
  - Professional liability insurance RVU
- Adjustments
  - The geographic practice cost index (GPCI)
- Convert RVUs To Dollars
  - The monetary conversion factor is updated annually

MPFS Payment Calculation

- Payment Calculation
  - Total RVU = (Work RVU * Work GPCI)
    + (PE RVU * PE GPCI)
    + (PLI RVU * PLI GPCI)
- Total Payment = Total RVU * Conversion Factor

MPFS Payment Calculation

- Payment Calculation
  - Total RVU = (Work RVU * Work GPCI)
    + (PE RVU * PE GPCI)
    + (PLI RVU * PLI GPCI)
- Total Payment = Total RVU * $$**Conversion Factor** $$

Conversion Factor Updates

A History Of Volatility

- 1992 CF - $31.001
- 1993 - 1997 - three conversion factors
- 1998 single CF reestablished - $ 36.6137
- 2001 CF - $ 38.2581
- 2002 CF - $ 36.1992 (-5.4%)
- 2003 CF - $ 36.7856 (+1.6%)
  - Congressional legislation authorized a technical correction to data from prior years' calculations
  - Prevented a 4.4% cut

2004, 2005 and 2006 Conversion Factor Updates

The Calculation is Abandoned (Temporarily)

- 2004 CF - $ 37.3374 (+1.5%)
- 2005 CF - $ 37.8975 (+1.5%)
- 2006 CF - $37.8975 (0%)
  - Congressional legislation mandated a 1.5% increase for 2004 & 2005 and a freeze in the 2006 conversion factor at the 2005 level, which prevented a 4.4% cut in 2006
  - ***No Congressional provision after 2006 !***

2006 Conversion Factor Update

- 2006 CF as of January 1, 2006 - $ 36.1770 (-4.4%)
- 2006 CF of $37.8975 (0.0%) when Congress passed the Deficit Reduction Act in February
  - Deficit Reduction Act freezes 2006 update to 2005 conversion factor (retroactive to January 1st)
  - ***Without a change in the update, calculation reductions of 4% to 5% per year will continue in 2007 and last through 2012***

Conversion Factor Updates

Updating the Conversion Factor

- The Medicare Economic Index (MEI) – based on inflation
- Sustainable Growth Rate (SGR) System
  - Establishes a target for expenditures (volume growth)
  - Compares actual expenditures to the target
  - When expenditures exceed the target, the CF is decreased
- Miscellaneous adjustments such as 'budget neutrality' adjustments

Sustainable Growth Rate Expenditure Target System

- What is the SGR?
  - Determines the ***target*** for spending growth
  - Most important yet least predictable factor for updating the CF
  - When actual Medicare spending is over the target (over-utilization) there is a mandated reduction in subsequent conversion factor updates
- Calculation of SGR target based on changes in the following:
  - Fees for physician services - (primarily the MEI)
  - Medicare fee for service enrollment
  - Real (inflation-adjusted) per capita GDP
  - Spending due to law and regulation

How The SGR Affects The CF

1998 - 2001

- Better than expected growth in US economy in 1998 and 1999 and only modest increases in utilization produced increases in the CF through 2001
  - GDP growth was 3% to 4%
  - Utilization growth was 2% to 3%
  - CF modestly increased and no complaints

How The SGR Affects The CF

2002 - 2005

- Poor economic performance combined with increasing utilization is producing significant downward pressure on the conversion factor
  - Average GDP growth 2001 - 2003 was < 1%
  - Growth in utilization 6% over target in 2002
  - Increased utilization largely comprised of drugs and diagnostic tests
  - Many complaints and legislative patches but no real fix to the SGR calculation

Conversion Factor Updates Without Legislative Help

2002	-5.4%	$ 36.199
2003	-4.4%	$ 34.606
2004	-4.5%	$ 33.049
2005	-4.5%	$ 31.561
2006	-4.4%	$30.172
1992		$ 31.001

Update Adjustment Factor 2006

$$UAF_{06} = \frac{Target_{05} - Actual_{05}}{Actual_{05}} \times .75 + \frac{Target_{4/96-12/05} - Actual_{4/96-12/05}}{Actual_{05} \times SGR_{06}} \times .33$$

UAF_{06} = Update Adjustment Factor for 2006
$Target_{05}$ = Allowed Expenditures for CY 2005 = $79.9 billion
$Actual_{05}$ = Estimated Actual Expenditures for CY 2005 = $92.9 billion
$Target_{4/96-12/05}$=Allowed Expenditures from 4/1/1996 - 12/31/2005 =$611.2 billion
$Actual_{4/96-12/05}$=Estimated Actual Expenditures from 4/1/1996 - 12/31/2005= $641.7 billion
SGR_{06} = 2.5 percent

$$\frac{\$79.9 - \$92.9}{\$92.9} \times .75 + \frac{\$611.2 - \$641.7}{\$92.9 \times 1.025} \times .33 = -21.1\%$$

Imaging Procedures – in the Top 3

Spending Growth By Service Category from 2003 to 2004

Type of Service	Percent of Spending	Percent of Increase	Contribution to Increase
Visits	38%	29%	4.4%
Minor Procedures*	20%	26%	3.9%
Images	14%	18%	2.8%
Laboratory and Other Tests	12%	11%	1.7%
Drugs	10%	11%	1.6%
Major Procedures	6%	3%	0.5%
Other	1%	1%	0.1%
Total	100%	100%	15.2%

Spending Growth by Type of Service 2004 to 2005

Type of Service	Growth Rate	Percent of Spending	Contribution to Increase	Percent of Increase
E & M	7%	37%	2.6%	31%
Procedures	9%	26%	2.5%	29%
Imaging	**16%**	**14%**	**2.3%**	**27%**
Lab & Other Tests	11%	12%	1.3%	15%
Drugs (under SGR)	-3%	9%	-0.3%	-4%
Other Services	20%	1%	0.3%	4%
Total	8.5%	100%	8.5%	100%

Imaging Cost Growth – a CMS "Target"

- Spending for imaging services paid under the Physician Fee Schedule between 2000-2005 more than doubled from $6.6 billion to $13.7 billion
- 15.7% average annual growth rate in imaging services from 2000-2005

Spending Growth for Four Categories of Imaging Services

Type of Imaging Service	2003 Growth Rate	2004 Growth Rate	2005 Growth Rate	2003-2005 Growth	Percent of 2005 Spending
Standard Imaging	15%	15%	8%	43%	5%
Advanced Imaging	20%	21%	25%	82%	5%
Echography	13%	13%	17%	49%	3%
Imaging Procedure	10%	11%	20%	47%	1%
Total Imaging	16%	16%	16%	56%	14%

Medicare Physician Fee Schedule Emphasis - 2006

- CMS will seek answers to "which changes in utilization are likely to be associated with important health improvements and which ones have health benefits that may be more questionable"
- "As part of this effort, we support MedPAC's recommendation for the development of measures related to the quality and efficiency of care by individual physicians and physician groups"

"Non-Physician Work Pool"

- CMS created the non-physician work pool (NPWP) for Technical Component codes that have no associated physician work
- Recall: PE pool = (PE/physician hour) x (total physician time)

  If no physician time, PE pool = zero
- CMS used '98 charge-based PE RVUs and not Clinical Practice Expert Panels (CPEP) data or PEAC

Breakout of Payment Values in the Medicare Physician Fee Schedule

- $PC=RVU_{pw}+RVU_{pe}+RVU_{mpi}$
- $TC= RVU_{pe}+RVU_{mpi}$
- Global=PC+TC
- CF=Dollar Multiplier

Medicare Part A

- Inpatient
  - DRG system
    - Based on primary diagnosis
- Outpatient
  - APC System
    - CPT codes assigned into payment groups based on clinical and resource (financial) homogeneity.

Definitions

- HOPPS-Hospital Outpatient Prospective Payment System
- APC-Ambulatory Payment Classifications
- CMS-Centers for Medicare and Medicaid Services
- BBA-Balance Budget Act (1997)

HOPPS/APC Overview

- April 7, 2000 CMS issued final rule on HOPPS 65 Fed. Reg. 18,434
- HOPPS went into effect August 2000
- HOPPS mandated by Balanced Budget Act (BBA) of 1997
- Previously Medicare paid for services performed in hospital on a variety of methodologies based on reasonable costs

HOPPS/APC Overview

- Provisions for annual updating
- APC weights, rates, payment adjustments and groups
- Transitional pass-through payments for additional costs of new medical devices, drugs, and biologicals
- In 2000, criteria established for special payment categories for new medical devices for pass-through payments and rate of reduction for beneficiary co-payments

HOPPS/APC Overview

- 2006 All covered outpatient services divided into over 800 APC Groups representing services that are clinically similar and require comparable resources-including supplies, drugs, devices
  - 389 Clinical Procedure APCs
  - 366 Drug, Device & Blood Product APCs
  - 82 New Technology APCs
- CMS considers the items and services within a group as NOT comparable if the highest median cost for an item or service within a group is more than two times greater than the lowest median cost

HOPPS/APC Overview

- HOPPS bundles "ancillary" procedures, most medical devices, and drugs <$50.00 into the "significant" procedure code
  - The costs associated with CPT 77790 Supervision, handling, & loading of radiation source (an ancillary code) are bundled into the LDR Brachytherapy procedures codes 77761-77778 (considered significant codes)
- Each APC is assigned a relative payment weight based on median costs of services within the APC
- Reviewed annually by the HHS Secretary

Significance of HOPPS/APC

- Determines hospital reimbursement for outpatient services (facility payment)
- Does not determine physician reimbursement
- May determine whether a hospital offers a service/device/drug
- Devices reimbursed below cost may not be a service offered by the hospital
- Hospital may not upgrade/purchase equipment for services poorly reimbursed

Significance of HOPPS/APC

- Drugs, biologicals and devices may be eligible for transitional pass-through payments
- At least two years, but not more than three years
- For 2006, 1 device (neurostimulator) and 19 drug pass-through codes
- Drugs and devices are then packaged into the procedure APC, some may become separate APCs paid in addition to the procedure (e.g., drugs & radiopharmaceuticals >$50.00, brachytherapy sources, blood products)

Cycle of review

- Proposed Rule published by CMS July/August
- 60 Day Comment Period (deadline Sept/Oct)
- Final Rule published on or about November 1st
- 60 Day Comment Period regarding specific items in the Final Rule (deadline January)
- APC Advisory Panel Meetings-February/March & August

Future Challenges

- New Technology
- Accurate Data Reporting & Collection
- Pay 4 Performance

New Technology

- New Technology APCs not based on clinical aspects of services they contain
- New Technology APCs based on "cost" of items or services
- Procedures moved from New Technology APCs to clinical APCs once CMS determines that it has collected sufficient cost data on the technology
- After 2-3 years, moved to clinically related APC group with comparable costs
- If no APC exists with these characteristics, CMS will create a new classification

New Technology

- New procedure CTA
- CT Abdomen w/ contrast and CT Pelvis w/ contrast and 3D Recon
- Hospital charge data determines New Technology APC assignment & reimbursement
- New procedure reimbursed less than prior combined old codes
- Hospital facility payments--Not physician reimbursement
- May effect decision to invest in CT equipment/workstations

Data Collection

- Hospital charge data used in APC grouping and payment
- Hospital charges sometimes based on APCs and not costs
- HOPPS payment rates based on hospital claims data (2 year lag)
- How does your hospital determine its "costs" for HOPPS?

Summary

- Diverse committee with physicians, hospitals, physicists, ACR Economics staff, academics and private practice
- Steep learning curve
- Predictable cycle of review
- New Technology and Data Collection challenges ahead

Hospital Payment Updates

- HOPPS conversion factor adjusted by the Hospital Market Basket Index
  - MBI: measures increase in cost of goods and services purchased by Hospitals
    - Wages
    - Benefits
    - Utilities
    - Technological Change
    - Productivity
    - Changes induced by change in case mix (actual or due to coding improvement)

APC	APC Name	CPT Codes	2005 Pymt	2006 Pymt	Percent Change
260	Level I Plain Film	77417	$43.87	$43.42	-1.0%
299	Misc. Radiation Treatment	77470	$332.60	$343.25	3.2%
300	Level I Rad Therapy	77401-77409, 77789	87.06	$87.24	0.2%
301	Level II Rad Therapy	77411-77416, 77422, 77423, 77750	124.12	$131.26	5.8%

APC	APC Name	CPT Codes	2005 Pymt	2006 Pymt	Percent Change
303	Treatment Device Construction	77332-77334	$163.67	$168.07	2.7%
304	Level I Rad Treatment Prep	77280,77299, 77300, 77305, 77326,77331, 77336, 77370, 77399	$97.48	$103.09	5.8%
305	Level II Rad Treatment Prep	77285, 77290, 77310, 77315, 77321, 77327, 77328	$224.07	$234.09	4.5%

APC	APC Name	CPT Codes	2005 Pymt	2006 Pymt	Percent Change
310	Level III Rad Treatment Prep	77295, 77301	$813.57	$826.12	1.5%
312	Radioelement Applications	77761, 77762, 77763, 77776, 77777	$317.87	$331.32	4.2%
313	Brachytherapy	77781-77784, 77799	$790.75	$774.85	-2.0%
314	Hyperthermic Therapies	77600-77620	$242.79	$332.31	36.9%
412	IMRT Delivery	77418, 0073T	$309.20	$318.82	3.1%

APC	APC Name	CPT Codes	2005 Pymt	2006 Pymt	Percent Change
651	Complex Interstitial Radiation Source Application	77778	$1,248.93	$666.21	-46.7%
664	Level I Proton Beam Therapy	77520, 77522	$561.62	$947.93	68.8%
667	Level II Proton Beam Therapy	77523, 77525	$850.00	$1,134.08	33.4%

CPT/APC Valuation

- Reference to RUC / PEAC surveys
- Independent surveys (ABT)
- Hospital cost data
- Hospital billing data (adjusted by the hospital's cost-to-charge ratio)
- Professional Specialty Society interactions with CMS

Can I Get Paid Now?