Reimbursement for Medical Radioisotopes in the United States

Mo99 Topical Meeting

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Reimbursement for Medical Radioisotopes in the United States

I. Scale of Mo-99 Medical Usage
II. US Reimbursement Schemes
III. Medicare and Medicaid Reimbursement Mechanisms
IV. Impact of Alternate LEU Source
V. Strategies for Mitigation
VI. Conclusion

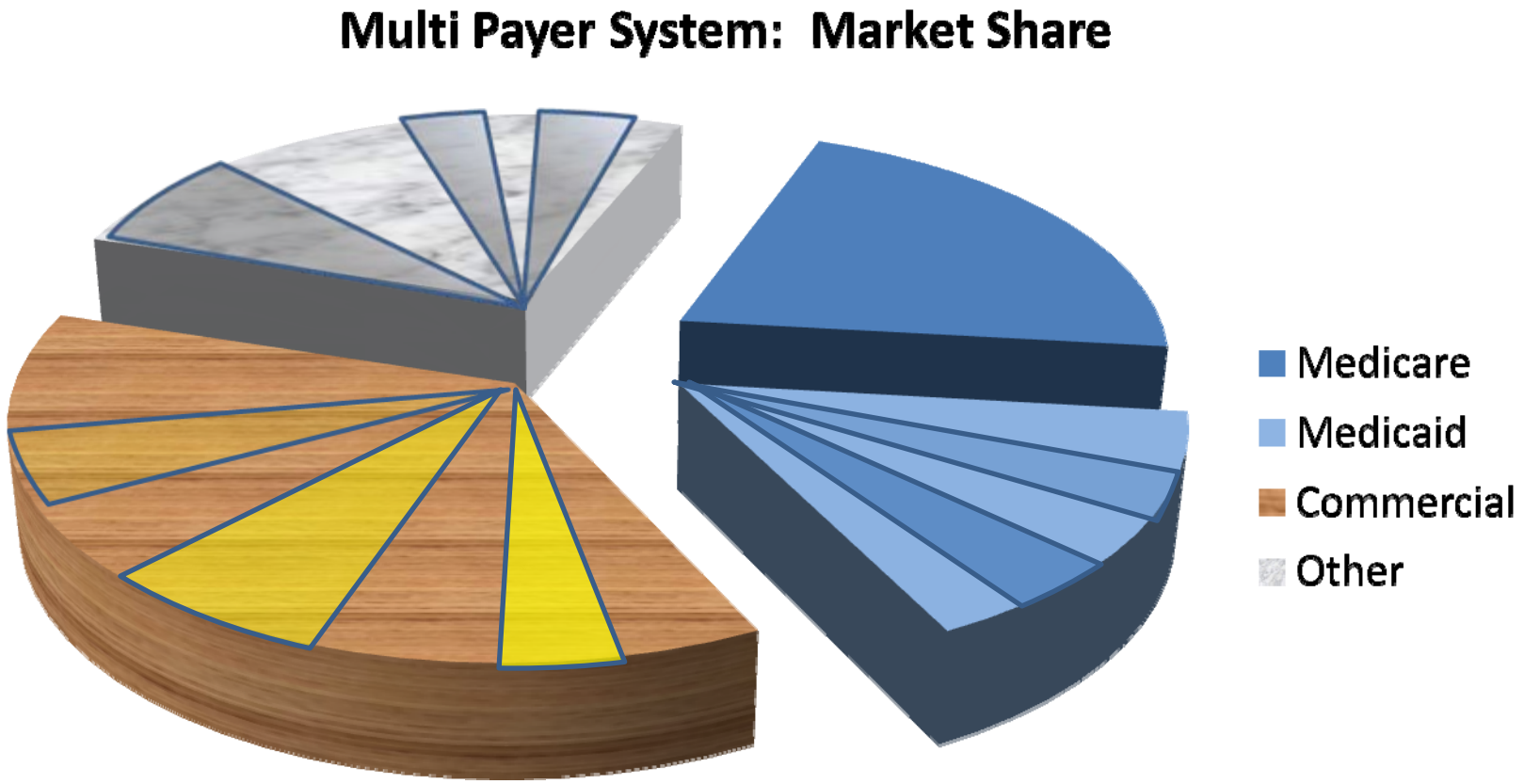
Scale of Mo-99 Medical Usage

- Order of magnitude *conservative* estimations
  - US Demand: 60% of world market
  - 80% Medical Use is Tc-99m Diagnostic Imaging
  - 30M doses per year at 1.5 doses per procedure
  - 120,000 generators per year
  - Average utilization 200 doses per 10 Ci generator
  - Expected dose 30 mCi

Scope of Tc-99m Usage

- 80% is SPECT imaging
- Myocardial Perfusion imaging 60%
- Bone scans
- Sentinel node detection
- Blood pool imaging
- Brain, GB, Renal, etc.

U.S. Reimbursement Schemes



US Reimbursement Schemes

- Medicare 21% Market Share SINGLE Payer
  - Prospective Payment Systems
- Medicaid 16% Market Share MANY Payers
  - Percent of Medicare, Percent of Charges
- Commercial 37% across MANY payers
  - Percent of Charges
- Other 26% Self pay, unpaid, VA, Tri-Care, etc.
  - Variable reimbursement

Medicare and Medicaid Reimbursement Mechanisms (IP)

- Inpatient Prospective Payment System
  - Inpatient Care
  - Large bundle
  - Diagnostic Related Groups
  - Average inpatient cost of stay for a given diagnosis
  - Not responsive to single elements
  - Updated annually (18 month average cost lag)
  - Example: DRG 313 Chest Pain $2993 (2012)

Medicare and Medicaid Reimbursement Mechanisms (Office)

- Medicare Physician Fee Schedule
  - Office (or equivalent Testing Facility)
  - Fee schedule
  - CPT (procedure) code based
  - Set payment based on relative use of resources
  - Adjusted by Sustainable Growth Rate
  - Practice expense changes only when revalued
  - Example: 78452 Myocardial SPECT: $478 (2011)

Medicare and Medicaid Reimbursement Mechanisms (OP)

- Outpatient Prospective Payment System
  - Outpatient Care
  - Small bundle
  - Ambulatory Payment Classifications
  - Average cost of a service in a group of related procedures (hospital cost = purchase price)
  - Not responsive to small cost elements
  - Updated annually (18 month average cost lag)
  - Example: 78452 Myocardial SPECT: $760 (2011)

Impact of Alternate LEU Source

- Magnitude of Cost Change
  - Technology Impact
  - Subsidization Impact
  - Amortization Impact
  - Supply-Demand Impact
- Estimations of Cost Change
  - +10% (study)
  - +50% (with risk reserve)
- Healthcare System ability to absorb cost increases

Production cost

- Data
  - $225 per 6d Ci in 2008
  - $1900 per 10 Ci generator in 2005
  - $11.00 per 30mCi dose of Tc-99m in 2005, variation >20%
- Assumptions (2012)
  - $2500 per 10 Ci generator
  - $12.50 per dose +/- 20%

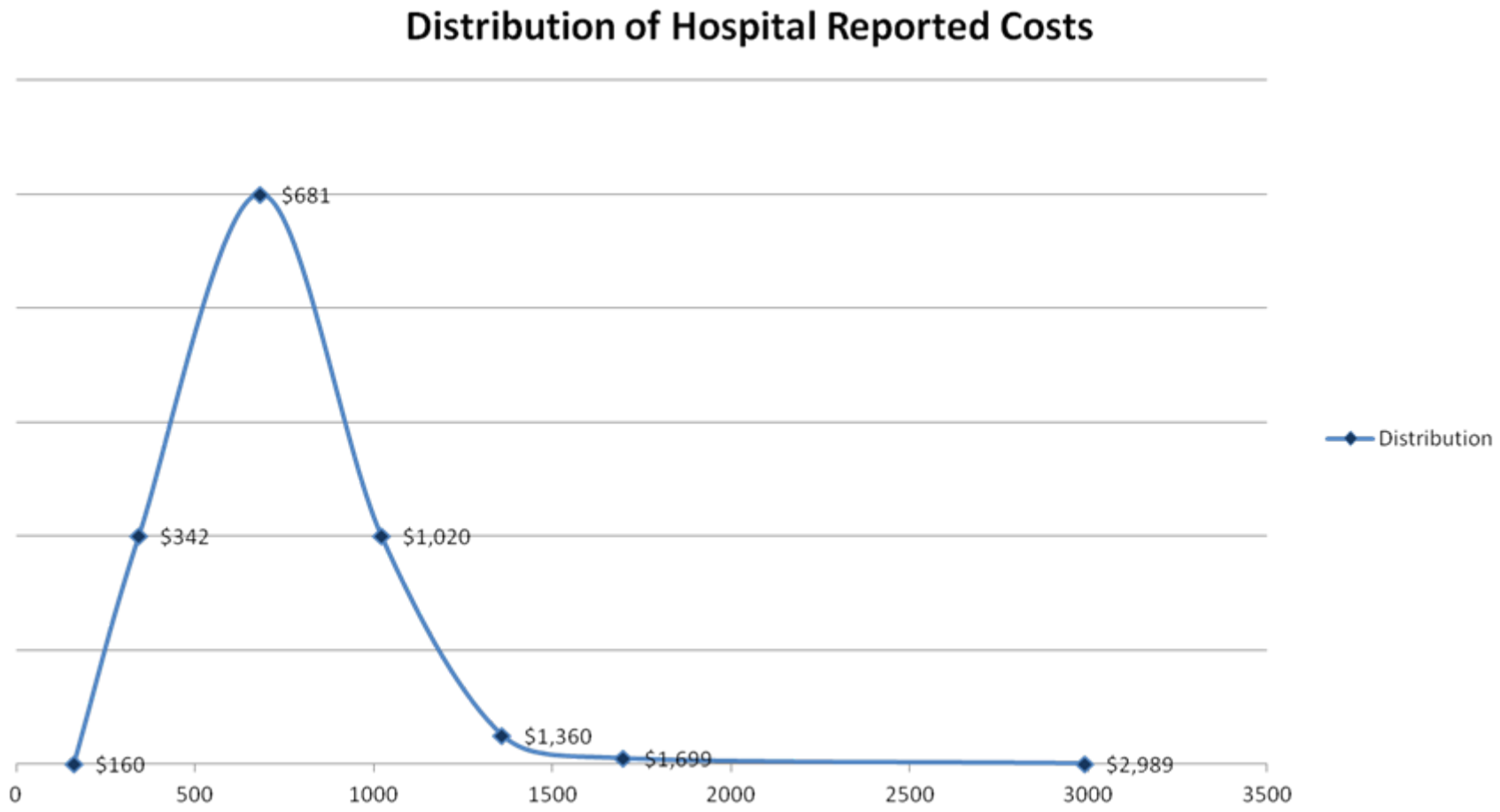
Imaging APCs Payment Ranges

CY 2012 APC	CY 2012 APC Title	Payment
0308	Positron Emission Tomography (PET) Imaging	1042
0377	**Level II Cardiac Imaging.**	**760**
0378	Level II Pulmonary Imaging.	320
0389	Level I Non-imaging Nuclear Medicine.	101
0390	Level I Endocrine Imaging.	133
0391	Level II Endocrine Imaging.	219
0392	Level II Non-imaging Nuclear Medicine.	174
0393	Hematologic Processing & Studies.	418
0394	Hepatobiliary Imaging.	265
0395	GI Tract Imaging.	239
0396	Bone Imaging.	244
0397	Vascular Imaging.	200
0398	Level I Cardiac Imaging.	291
0400	Hematopoietic Imaging.	257
0401	Level I Pulmonary Imaging.	197
0402	Level II Nervous System Imaging.	596
0403	Level I Nervous System Imaging.	240
0404	Renal and Genitourinary Studies.	321
0406	Level I Tumor/Infection Imaging.	290
0408	Level III Tumor/Infection Imaging.	825
0414	Level II Tumor/Infection Imaging.	475

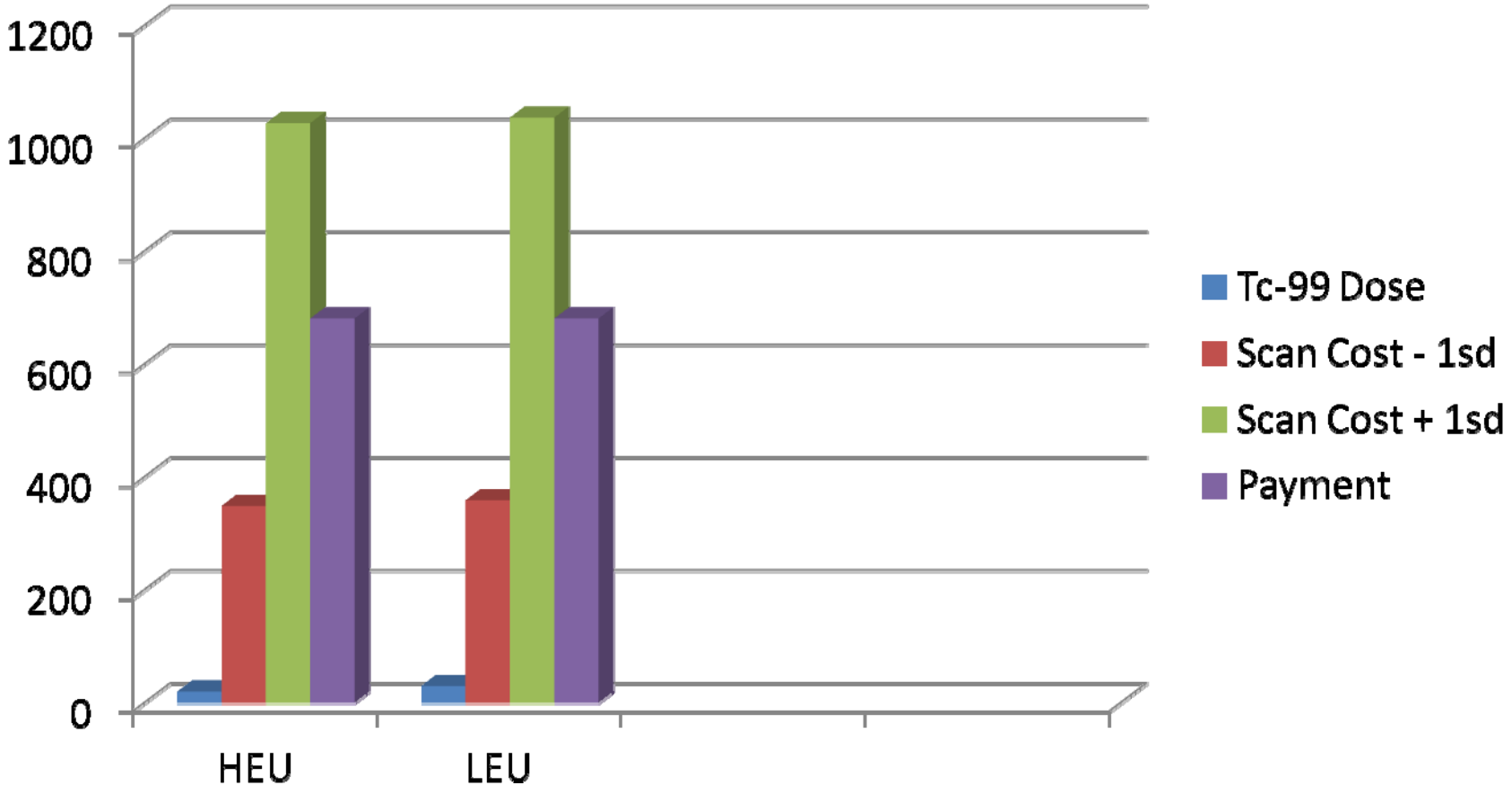
Cardiology II Payment Ranges

Procedure Code	Procedure	Median Cost
78451	Ht muscle image spect sing	$484.27
78454	Ht muscle image planar mult	$646.14
78453	Ht muscle image planar sing	$561.77
78452	**Ht muscle image spect mult**	**$681.23**

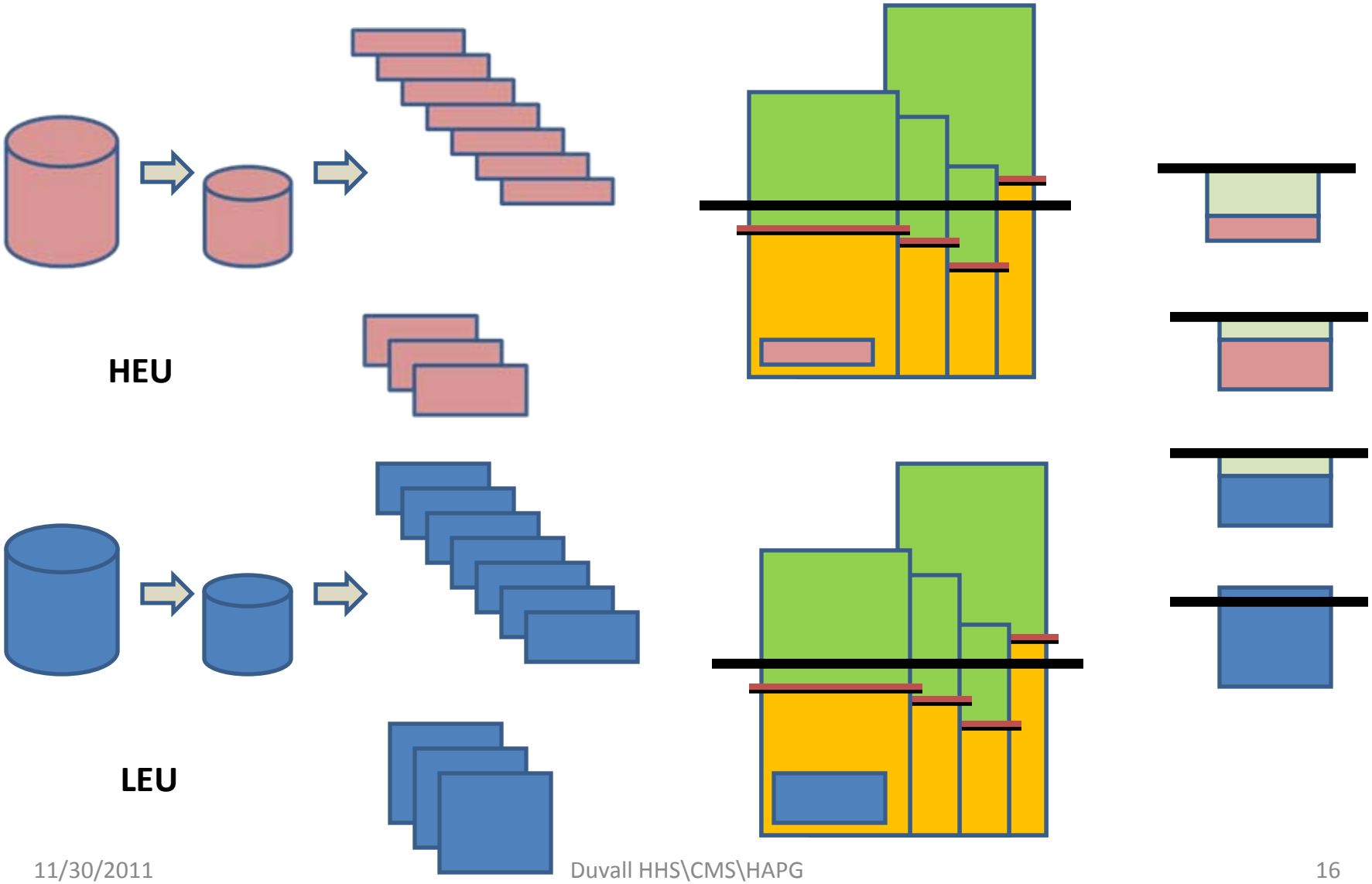
CPT 78452 Procedure Cost Ranges



Payment Impact of 50% Price Increase



Procedure Cost Related to Dose



Payment Adequacy vs. Payment Differential

Payment Adequacy

- Supported by Prospective Payment
  - Packaged
  - Separate
- Supported by % of charges
- Capital investment can be included in price
- Time lag irrelevant for single supplier

Payment Differential

- Not supported by Prospective Payment
  - No differential if packaged
  - No differential if separate
- Not supported by % of charges
- Requires direct cost reimbursement of individual supplier level costs

Strategies for Mitigation

- Remove Barriers to Entry
  - Cost
  - Lead time
- Insure ROI
  - Payment stability
  - Stable growth (4%/year)
  - Emerging markets (China)
- Decrease competitive disadvantage
  - Exposed cost (e.g. separate payment) removes cost control pressure
  - Does not remove competitive disadvantage unless differential payments exist for HEU and LEU sourcing

Strategies for Mitigation

Residual Risk:

- Price sensitive alternatives
  - PET, helical and high resolution CT, thallium, N-13,
- Technological stability (New alternative imaging)
  - Predictable incremental resolution improvement
  - Alternatives for cellular data transmission require breakthrough (unpredictable) improvement
  - Long investment horizon makes predictions tenuous

Conclusion

- US health care is reactive not proactive
- The Medicare payment system and US healthcare in general absorbs cost very well
- Cost differential is a more important issue than payment adequacy
- End user payments are not an ideal vehicle for mitigating the cost impact of different sources of a functionally identical product
- Total healthcare expenditures can be expected to continue to increase cost pressure which emphasizes cost differential