Medical Economics and Reimbursement

Marc Raphaelson, MD
Greater Washington Sleep Disorders Centers
gwsleepdocs.com
raphaels4@aol.com

Challenges for Sleep Medicine

- Growth invites review.
  - CMS will eventually reevaluate the cost of PSG.
  - CMS is reevaluating home studies
- Growth invites regulation and higher standards
  - Physician: Sleep Medicine Boards
  - Technologist: licensing
- How do we pay for new technology?
- Physician payment revisions
  - Evaluation & Management vs Surgery vs Procedures

Growth in Sleep Medicine Services
referenced to 1998 baseline

Ordering MD for 95810, CMS 2005

- pulm/crit care
- IDTF
- neuro
- int med/FP
- cardiology
- ORL
- general/fam pract
- psych
CMS Independent Diagnostic Testing Facility: 1999

- Facilities not in hospital or practice, i.e., independent legal entity; Medicare regulations stricter.
- MD supervisor certified in psychiatry and neurology, internal medicine with pulmonary subspecialty, or sleep medicine
- ? Techs must be certified

CPAP on the HCPCS Radar

- 2005: “Although CPAP products represent the third-largest group [in respiratory care], they are also the fastest-growing area, experiencing growth rates of 15–18%.”
- 2006: “U.S. Positive Airway Pressure Therapy Devices Market is expected to enjoy a health growth trend, passing the $1 billion threshold by 2007.”
- 2009: CMS competitive bidding contract for CPAP in 70 more Metropolitan Statistical Areas

Trends in Sleep Apnea Surgery

- Database: HCUPNET info
- Hospital procedures are tracked by ICD-9-PCS codes, which are different from CPT codes: a single code includes tonsillectomy and palatal procedures.
- Search for admissions with principal dx OSA.
- In 2005, 29% admitted from ED.

HCUPnet

- Nationwide Inpatient Sample (NIS)
- Federal-State-Industry partnership sponsored by the Agency for Healthcare Research and Quality
- NIS data: 1988 to 2002
About $18,162 per OSA discharge in 2005
Aggregate charge growth:

Sleep Apnea Surgery: CMS 2008 Payment

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
<th>CMS Prof Payment 2008</th>
<th>CMS Facility Payment 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>0088T</td>
<td>Radiofrequency tongue base volume reduction</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30520</td>
<td>Nasal Septoplasty or submucous resection, with or without cartilage scoring, contouring or replacement with graft.</td>
<td>$233</td>
<td>$250</td>
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<tr>
<td>42140</td>
<td>Uvullectomy, excision of uvula.</td>
<td>$56</td>
<td>$72</td>
</tr>
<tr>
<td>42145</td>
<td>Palatopharyngoplasty (e.g., uvulopalatopharyngoplasty, uvulopharyngoplasty)</td>
<td>$328</td>
<td>$255</td>
</tr>
<tr>
<td>42826</td>
<td>Tonsillectomy, primary or secondary; age 12 or over.</td>
<td>$116</td>
<td>$97</td>
</tr>
</tbody>
</table>
CMS Conversion Factor

- For 2005, 2006, 2007: Fees frozen (Costs not frozen)
- For 2008: 10% cut
- Final rule Nov 2007: Conversion factor = $34.07
- Annually adjusted for budget neutrality
- Adjusted within “buckets”

CMS Fees

- These are average national fees
- Adjust for your locality using Geographic Professional Cost Index
- RVUs realigned in 2007 after Medicare 5-year review, generally increasing values for physician work.
- THEN: CMS reduced the MD work component of all codes by 10% using a “Budget Neutral Work Adjustor!”

CMS Fees 2008

- 2008: 2nd of 4-year transition to revised practice expense RVUs.
- Revised RVUs for physician work.
- Increased budget neutrality adjustment created last year will decrease payments by about 1%.
- Geographic adjustment factors have been updated, as they are every three years.

Sleep Apnea Surgery

- Major insurance issue is: What procedure will be allowed as medically necessary?
- Decisions usually made case-by-case
- New 2008 codes for base of tongue surgery
Sleep Diagnosis Coding

- ICSD: AASM 1990, revised 1997
- ICSD2: AASM 2005. Important scientific and clinical advancement, but:
  - CMS & other insurers require ICD-9-CM codes
  - Insurers match services to ICD-9-CM codes
  - ICD-9-CM: Regular revisions, ICD-10 not adopted in US

Sleep Disorders Coding 2006

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>327.21</td>
<td>Primary central sleep apnea</td>
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<tr>
<td>327.27</td>
<td>CSA due medical condition</td>
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<td>327.23</td>
<td>Obstructive sleep apnea</td>
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<td>327.24</td>
<td>Sleep nonobstruct hypoventilation</td>
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<tr>
<td>327.26</td>
<td>Sleep hypvent/hypox, secondary</td>
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<tr>
<td>786</td>
<td>Primary snoring</td>
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</tbody>
</table>

Sleep Testing: Coding, Reimbursement

- Current CPT codes for PSGs
  - Attended or unattended
  - Recording 6 hours or more

Sleep Testing - CPT Codes

- **95805** Multiple sleep latency testing (MSLT), recording, analysis and interpretation of physiological measurements of sleep during multiple nap opportunities
- **95806** Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and oxygen saturation, unattended by a technologist
- **95807** Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and oxygen saturation, attended by a technologist
- **95808** Polysomnography; sleep staging with 1-3 additional parameters of sleep, attended by a technologist
- **95810** Polysomnography; sleep staging with 4 or more additional parameters of sleep, attended by a technologist
- **95811** Polysomnography; sleep staging with 4 or more additional parameters of sleep, with initiation of continuous positive airway pressure therapy or bilevel ventilation, attended by a technologist
MD Supervision of PSG

- “General supervision means the procedure is furnished under the physician’s overall direction and control, but the physician’s presence is not required during the performance…the training of the nonphysician who performs the diagnostic procedure and the maintenance of the necessary equipment and supplies are the continuing responsibility of the physician.”
- Remember this when negotiating medical director or interpretive duties.

Portable Monitoring

- New CPT application for 95806 to include monitoring of peripheral blood volume rather than ventilation and effort.

CMS PSG Outpatient Fees 2008

(Final Rule nov07)

<table>
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<tr>
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Hospital Facility Fee Payment by Ambulatory Payment Classification (APC)

- Groups procedures/services by clinical and cost similarities; approx 7500 CPT codes grouped into about 450 APC codes.
- Covers hospital costs of non-physician labor, equipment and supplies.
**PSG Hospital Outpatient 2008**

<table>
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<tr>
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<td>4+CPAP</td>
<td>$638</td>
<td>209</td>
<td>719</td>
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</table>

Note:
- Medicare does not pay for 95806.
- Medicare does pay for APC 213.

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**Medicare 2005 Frequency**

<table>
<thead>
<tr>
<th>CPT</th>
<th>APC</th>
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<tr>
<td>95805</td>
<td>0209</td>
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<td>0209</td>
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<tr>
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<td>0209</td>
<td>219,659</td>
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**Comparing CMS Payments 2008: PSG vs other procedures**

<table>
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<tr>
<th>CPT</th>
<th>Procedure</th>
<th>CMS Payment 2008</th>
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<tbody>
<tr>
<td>70553</td>
<td>MRI brain w/o&amp;w dye</td>
<td>$744</td>
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<tr>
<td>71552</td>
<td>MRI chest w/o&amp;w/dye</td>
<td>$872</td>
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<tr>
<td>78465</td>
<td>Heart image (3d), multiple</td>
<td>$462</td>
</tr>
</tbody>
</table>

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**Actigraphy**

- Movement monitor: wrist, leg or trunk to ID sleep
- Eval tx RLS or PLMD
- 0089T: Cat III CPT code, or “tracking” code
- 2007: Request for Category I code pending
- May report actigraphy
- No Medicare payment; negotiate other payers:
  - reference the CPT codes
  - Reference the AASM statements.
American Board Medical Specialties

- New exams fall 2007 for MDs certified in internal medicine, family practice, neurology, pediatrics, psychiatry, otolaryngology.
- Results announced Jan 2008: under 1400 diplomates; pass rate 73%.
- Window of opportunity for MDs.
- Expect spike in board-certified sleep MDs.

Sleep Tech Issues 2008

- State licensing: RPsgT
- Scope of practice vs RRT
  - State law: Who can administer CPAP or O2?
  - (By the way, can RPsgT admin medicine?)
- Credentials for IDTF
- NEW: AASM approved 80-hour training
- NEW: CAAHEP curriculum
- AASM/AAST (formerly APT) job descriptions
- aastweb.org

Sleep Tech Issues 2008

- 2006 Maryland Polysomnography Act
- Licenses PSG technologists
- Defines Scope of practice
- Sets educational requirements
- Effective October 2009

Sleep Tech Issues 2008

- Scope of practice:
- Diagnosing and treating patients with sleep disorders
  - CPAP and BiPAP
  - Supplemental oxygen
  - Specify parameters to be monitored including sleep staging, limb EMG, ECG, respiratory effort and flow, SpO2, capnography, snore, esophageal pressure, audio and video monitoring.
  - Placement of esophageal pressure monitor
Sleep Tech Issues 2008

- Scope of practice: Dental appliance, provided:
  - Device does not extend into trachea
  - DDS has eval oral & maxillofacial region for fitting
  - DDS made or directed the making of the device
  - DDS directs the use of the device

Salinas CA Hospital cited: CA Dept of Health Care Services coop with the CA Resp Care Board (RCB)
- Employing unlicensed personnel (PSG tech) to conduct PSG, PAP titration and/or nocturnal O2 administration.
- 1983 California Respiratory Care Act prohibits “non-licensed practitioners” from performing procedures that “maintain the natural airway.”
- No license available for PSG techs.

Recommended action:
- Lobby the RCB!
- Organize state PSG techs!
- Join AASM!
- Consider state licensure of PSG techs!

Sleep Treatment Dispensing

- CPAP and Oral Appliances are Durable Medical Equipment (DME).
- Dentists rarely have DME contracts with insurers.
- Physician obstacles to DME dispensing: Federal and State self-referral regulations.
- CMS may require separate entity to get DMERC number, not a medical practice.
- Other insurers may require CMS DMERC number for payment.
Oral Appliance Therapy

- No required CPT code
  - CPT E1399  Durable medical equipment
- Is DME
- No regular coverage by CMS
- CMS billing and DME restrictions

Oral Appliance HCPCS Codes

- Oral orthotic for treatment of sleep apnea, includes fitting, fabrication, and materials S8260
- Oral device/appliance used to reduce upper airway collapsibility, adjustable or non-adjustable, prefabricated, includes fitting and adjustment E0485
- Oral device/appliance used to reduce upper airway collapsibility, adjustable or non-adjustable, custom fabricated, includes fitting and adjustment E0486

CMS CPAP Approval 2002

- “AHI ≥ 15, or
- AHI ≥ 5 and ≤ 14 with documented symptoms of excessive daytime sleepiness, impaired cognition, mood disorders or insomnia, or documented hypertension, ischemic heart disease or history of stroke.”

CMS CPAP Approval 2002

- “The AHI is equal to the average number of episodes of apnea and hypopnea per hour and must be based on a minimum of 2 hours of sleep recorded by polysomnography using actual recorded hours of sleep (i.e. the AHI may not be extrapolated or projected).”
**CMS CPAP Approval 2002**

- “Apnea is defined as a cessation of airflow for at least 10 seconds. Hypopnea is defined as an abnormal respiratory event lasting at least 10 seconds with at least a 30% reduction in thoracoabdominal movement or airflow as compared to baseline, and with at least a 4% oxygen desaturation.”

**CMS CPAP Approval 2002**

- “The polysomnography must be performed in a facility-based sleep study laboratory, and not in the home or in a mobile facility.”

**CMS CPAP Approval 2007 Proposed**

- … we believe that the perfect tool for diagnosing OSA in all Medicare beneficiaries is not PSG, HST, or trial by CPAP. We believe that different beneficiaries will benefit from different strategies.

**CMS CPAP Approval 2007 Proposed**

- We propose that the evidence is adequate to conclude that a positive PSG or a positive HST is reasonable and necessary for the diagnosis of OSA and subsequent treatment with CPAP. We are including only Type II, III and IV devices under HST. Since we have evidence that not all patients with a positive PSG or HST will benefit from CPAP, we are proposing that CPAP is only reasonable and necessary for a period of twelve weeks to determine benefit from and compliance with this therapy. Coverage beyond that period must be contingent on the beneficiary's clinical response to CPAP.
CMS CPAP Approval 2007 Proposed

- Trial period of CPAP up to 12 weeks with positive facility-based PSG or home sleep test, including only Type II, III, or IV machines as defined by:
  - AHI (apnea hypopnea index) greater than or equal to 15 events per hour with a minimum of 30 events; or
  - AHI 5-14 events per hour with a minimum of 10 events in patients with documented symptoms
- Type IV studies accepted only in context of a rigorous clinical trial

CMS CPAP Approval 2007 Proposed

- Longer term CPAP is covered with demonstrated appropriate therapeutic use and response to the trial use of CPAP.
- Medicare contractors may include consideration of the reports obtained via a compliance monitor as a factor in making this determination.

Medicare and CPAP

- Practical approach to scoring/reporting:
  - Score apneas, hypopneas, and RERAs separately.
  - Report RDI and AHI.
  - Review Medicare patient AHI carefully.
  - You cannot get all Medicare patients with sleep apnea to qualify for CPAP coverage!

AASM Clinical guidelines Nov 2007

- Unattended portable monitoring should be done:
  - Only in conjunction with comprehensive sleep eval.
  - Supervised by board certified or eligible MD, in AASM-accredited program.
  - For patients with high pretest probability of OSA.
  - For patients who can’t come to the lab.
  - Minimum data: airflow, resp effort, oxygenation.
  - Raw data must be reviewable.
  - Negative tests in this population should lead to attended PSG.
AASM Clinical guidelines Nov 2007

- Unattended port monitoring is not indicated for:
  - General screening of asymptomatic people.
  - Eval patients with sleep comorbidity.

USA and OSA

- Army, 11sep07:
  - “The soldier can be deployed if nasal CPAP is required and can be supported in the area of deployment.”
- Navy:
  - Fitness for duty: Fit for full duty unless local MD feels sailors can’t be deployed to that station.
- Retirement with OSA; Medical Care transferred to VAMC
  - 40% disability for OSA; 50% if treated with CPAP
  - Benefit about $1,000 per month
  - Snoring soldiers and sailors nearing retirement get PSG.

Proportion Offered CPAP as OSA prevalence varies; hypothetical cohort of 100,000

CPAP Process

- “Nobody could tell me how much it would cost.
- “The DME companies insisted that only my insurer could tell me the price.
- “I picked out the one I wanted online, but no company could guarantee they had it.
- “I was not comfortable with the whole process.
- “I ended up buying a unit online.”

(Anonymous auto dealership manager with OSA)
### Sleep Apnea Treatment Initiation Costs

<table>
<thead>
<tr>
<th>Sleep Apnea Patient: Cost of Diagnosis and Treatment Initiation, avg CMS, 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
</tr>
<tr>
<td>99244</td>
</tr>
<tr>
<td>99213</td>
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<tr>
<td>99213</td>
</tr>
<tr>
<td>95810</td>
</tr>
<tr>
<td>95811</td>
</tr>
<tr>
<td>CPAP 12 months - est</td>
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<tr>
<td><strong>Total</strong></td>
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</tbody>
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### Integrated Sleep Apnea Care
- Evaluation/Management services
- NEW: Home testing
- PSG
- Oral airway therapy
- CPAP dispensing
- Surgery
- ? Common EMR
- ? CPAP report includes CMN

### Challenges for Sleep Medicine
- Growth invites review.
  - CMS will eventually reevaluate the cost of PSG.
- Growth invites regulation and higher standards
  - Physicians and technologists.
- How do we pay for new technology?
- Physician payment revisions
  - Evaluation & Management vs Surgery vs Procedures

### References
- Sleep Center Management, Marc Raphaelson, MD, AASM 1998, 2nd ed 2000
- Cost justification for diagnosis and treatment of obstructive sleep apnea. Sleep 23: 1017-1021, 2000
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- Evolution of sleep medicine: J Clin Sleep Med vol 1