What Is the Future of Sleep Medicine?

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Outline of Talk

• What changed the landscape?
• Events in Massachusetts a cautionary tale
• Were warning signals ignored?
• Where should sleep medicine go?

Current State of Sleep Medicine

Narcolepsy, etc.
RLS
Insomnia
Diagnosis and Management of OSA
In-Laboratory Polysomnography

Have built field of sleep medicine on one test for one disorder
What Changed the Landscape?

• Concern about rapid growth of diagnostic costs

• Studies in USA showing sleep apnea could be effectively diagnosed with home sleep testing
  – had been used in European countries for years

Rapid Growth of Polysomnography (CMS)

HOW MUCH OF THIS IS INCREASED RECOGNITION?
HOW MUCH IS OVER-TESTING?

Let’s Look at the Evidence:
Is HST equivalent to PSG?

Some Key Studies

• Whitelaw et al. Am J Respir Crit Care Med 2005; 171:188-93
• *Berry R et al. Sleep 2008; 31(10):1423-31
• *Kuna S et al. Am J Respir Crit Care Med 2011; 183(9):1238-1244
• Rosen CL et al. Sleep 35:757-767, 2012

*Studies done in VA system
Noninferiority of Ambulatory Management of Obstructive Sleep Apnea (Kuna ST et al, AJRCCM 183:1238, 2011)

Referral for OSA \(\rightarrow\) randomized into in-home or in-lab pathway

\begin{itemize}
  \item In-lab (AHI=47.3±29.4)
  \item Home Pathway (AHI=42.9±23.2)
  \item PSG
  \item CPAP titration
  \item 1-month follow-up (n=92)
  \item 3-month follow-up (n=88)
  \item Auto-CPAP at home (4-5 nights)
  \item Fixed CPAP
  \item 1-month follow-up (n=103)
  \item 3-month follow-up (n=96)
\end{itemize}

OUTCOMES: FOSQ, SF12, Epworth, PVT, CES-D and CPAP adherence

Noninferiority of Ambulatory Management of Obstructive Sleep Apnea (Kuna ST et al, AJRCCM 183:1238, 2011)

**Changes in Some Outcomes**

<table>
<thead>
<tr>
<th></th>
<th>Home Group</th>
<th>Lab Group</th>
<th>Differences in change scores between groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOSQ</td>
<td>1.74±2.81*</td>
<td>1.85±2.46</td>
<td>NS</td>
</tr>
<tr>
<td>Epworth</td>
<td>-2.6±5.2*</td>
<td>-2.9±4.4*</td>
<td>NS</td>
</tr>
</tbody>
</table>

*All p<0.0001


<table>
<thead>
<tr>
<th></th>
<th>In-Lab</th>
<th>Home</th>
<th>PValue</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPAP compliance (3 months)</td>
<td>219±144 mins</td>
<td>281±126 mins</td>
<td>p=0.001</td>
</tr>
<tr>
<td>Change in Epworth score</td>
<td>-7.4±5.4</td>
<td>-7.0±3.3</td>
<td>p=0.85</td>
</tr>
<tr>
<td>Change in FOSQ</td>
<td>-3.8±2.9</td>
<td>3.1±2.8</td>
<td>p=0.38</td>
</tr>
</tbody>
</table>

Home had improved CPAP compliance but no difference in changes in other outcomes between two pathways
Outcome Studies

• Equivalence between HST and in-lab PSG with regards to:
  – Patient satisfaction
  – Quality of Life
  – Epworth and other sleep measurement tools
  – CPAP adherence (one study ↑ home)

• NOTE: ALL PATIENTS STUDIED WERE HIGHLY SCREENED WITH HIGH PRETEST PROBABILITY AND WERE MANAGED BY SLEEP CENTERS—NOT GENERALIZABLE

Assessing Concordance of Decision-Making to Use CPAP or Not Based on Home Studies or In-Lab Studies
(Masa J et al, AJRCCM 184:964, 2011)

Decision-making agreement is decreased at AHI<25 events/hour.
A CAUTIONARY STUDY – SEEMS TO BE IGNORED.

New Corporate Approaches

• Direct provision of sleep studies to consumers and primary care physicians (e.g., based on ARIES) (e.g., Watermark)

• Companies who work for payors to manage sleep diagnostic costs (e.g., Sleep Management Solutions) – also provide HST and CPAP
Massachusetts ALERT

- Fallon Community Health Plan (FCHP), then Tufts (THP) contracted with Sleep Mgmt Solutions (SMS) and CareCorp (gatekeeper)
- CareCorp decides which pt gets which test; SMS does HST and provides DME
- As expected most patients are steered to HST
- Then, Harvard Pilgrim HealthCare (HPHC) added similar program but allows other providers to do the HST/DME
- Reduced PSG tests – estimates are by 50-60%

MAY BE COMING BACK (From N. Collop)

The Wild West of Sleep Apnea Testing

We regret to inform you that

SLEEP HEALTHCENSTERS
IS CLOSED FOR BUSINESS

Due to circumstances beyond our control, we have ceased all clinical and lab operations

Program in Boston, including at Brigham (Harvard)

Closure of pre-eminent sleep medicine program
Were There Warning Signs?

Institute of Medicine Report (2006)

• Recommendation 9.2
  – All private and academic sleep laboratories should be under the auspices of accredited sleep centers and include adequate mechanisms to ensure long-term patient care and chronic disease management. Accreditation criteria should expand beyond a primary focus of diagnostic testing to emphasize treatment, long-term patient care, and chronic disease management strategies.

WHY WAS THIS IGNORED?

CMS (Medicare) Evaluation 2008

• Can CPAP be prescribed based on diagnosis established by home sleep testing:
  – American Academy of Sleep Medicine: No
  – American Thoracic Society: Yes
  – American College of Chest Physicians: Yes

This was game changer

WHY DID IT TAKE 5 YEARS TO RESPOND?
Sleep Medicine – Strategies for Change
(Pack AI, J Clin Sleep Med 7:577, 2011)

• Advocated an outcomes-based approach to care
• Use of information technology, including EMR, to capture outcomes data
• Chronic care management
• Incorporation of nurse practitioners and others
• Use of accreditation to move our field to a quality outcomes field

EMPHASIZED URGENCY

The Future of Sleep Medicine – Will You Be Part of It?

• AASM proposed integrated center model
  – Diagnostic testing, treatment and tracking outcomes
• Board of AASM believes that this is future of clinical sleep medicine
• Proposed focus group of members to refine plan
• Proposed new accreditation for integrated centers
• Proposed presenting plan to all insurance carriers

WHAT HAPPENED?

Change in Sleep Medicine Occurs At A Time That Overall Health Care Is Changing

• Focus on health not simply treating disease
• Value-based purchasing
• Quality incentive programs
• Patient-centered medical home
• Accountable care organizations
Quality Standards for CMS Include

- Preventive Care
  - Influenza immunization
  - Pneumonia vaccination (>65 years)
  - BMI screening
  - Tobacco use
  - Screening for depression
  - Screening mammography
  - Screening for high blood pressure

Should sleep apnea screening be part of this?

Sleep Medicine Is Well Positioned To Cope with These Changes

- Sleep disorders are extremely common
- Insomnia is risk factor for depression
- Sleep apnea is risk factor for crashes, reduced QoL and CV outcomes
- Sleep apnea is major part of obesity epidemic
- We have defined outcomes and have fantastic technology for chronic care management (e.g., remote CPAP monitoring)

What Should Our Future Be?

- Develop integrated programs in collaboration with our primary care physicians
- Give primary care physicians education and tools (e.g., questions in EMR) to identify sleep disorders
- Do cost-effective diagnosis – appropriate use of HST
- Define and track outcomes for all sleep disorders (not just sleep apnea) – need CBT for insomnia
- Deploy care management
- Utilize non-physician extenders – nurse practitioners, sleep medicine coordinators (new concept)
Potential Outcomes for OSA

- Process
  - CPAP compliance
- Other outcomes
  - Epworth Sleepiness Score
  - FOSQ (could be short version)
  - SF-36
  - Blood pressure

Could Bundled Payment Models for Sleep Disorders Work?
(AHA Research Synthesis Report, 2010)

- Bundled payment has been proposed as means to drive improvements in health care quality and efficiency
- Currently limited data on how to design and administer
- Can control costs, integrate care delivery
- Health reform – national pilot of bundled payment models for Medicare by 2013
- Have been some early success stories

Key Consideration for Bundled Payment
(AHA Research Synthesis Report, 2010)

- To which conditions should bundled payments be applied?
- What providers and services should be included in the bundled payment?
- How can provider accountability be determined?
- What should be the timeframe of a bundled payment?
- What capabilities are needed for an organization to administer a bundled payment?
- How should payments be set?
- How should the bundled payment be risk-adjusted?
- What data are needed to support bundled payment?

DO WE NEED PILOTS FOR SLEEP DISORDERS?
Accreditation of Sleep Centers Needs to Change

• Minimal standards and do what our members want is not an acceptable principle
• Accreditation can be used to enhance quality without not accrediting centers – shorter-term approval to give time to improve
• Has to be focused on outcomes of patient care

What Are Barriers to Change?

• A non-realistic view by many sleep medicine physicians that things can stay the same

• Protecting the in-lab PSG – the money maker

Conclusion

• Sleep medicine is a chronic care management discipline, not a diagnostic one
• An exciting time for sleep medicine
• An opportunity to change direction to help patients and control costs
• Have some great assets
  – Very prevalent disorders with effective treatments that change patient lives