Challenges and Opportunities for the AASM in Sleep Medicine

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Conflict of Interest Disclosures for Speakers

1. I do not have any relationships with any entities producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients, OR

2. I have the following relationships with entities producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients.

<table>
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<tr>
<th>Type of Potential Conflict</th>
<th>Details of Potential Conflict</th>
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<tbody>
<tr>
<td>Grant/Research Support</td>
<td>NIH, University of Michigan, National Multiple Sclerosis Society</td>
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<td>Consultant</td>
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<tr>
<td>Other</td>
<td>University of Michigan Health System, Sleep Center</td>
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<td>American Academy of Sleep Medicine</td>
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3. The material presented in this lecture has no relationship with any of these potential conflicts, OR

4. This talk presents material that is related to one or more of these potential conflicts, and the following objective references are provided as support for this lecture:
   
   Published practice guidelines of AASM (http://www.aasmnet.org/practiceguidelines.aspx)
Disclaimers

- I serve as President-Elect of the American Academy of Sleep Medicine (AASM).

- In this position I do not have authority to make any new commitment on behalf of the AASM Board. I can bring ideas to the Board for discussion and consideration.

- In this presentation:
  - Some of the views and opinions expressed are mine alone and have not been endorsed by the AASM.
  - That said, I endeavor to avoid deviation from existing AASM policy where such policy has been established.
Promise of Sleep Medicine
Promise of Sleep Medicine

- All animals sleep or have quiescent period
- 1/3 of human life is spent asleep
- Every known human cell has a circadian rhythm
Promise of Sleep Medicine

- Sleep problems and disorders are
  - Highly prevalent
  - Intrinsic to the human experience
  - Consequential
  - Treatable
Sleep Disorders: Relevant to Many Aspects of Health

- Longevity
- Quality of life
- Productivity
- Medical costs
- Motor vehicle crashes
- Cardiovascular health
- Pulmonary health
- Mental health
- Post-operative survival
- Learning and Cognition
- Growth
- Metabolism
- Obesity
- Inflammation
- Immunity
Are Americans Getting the Sleep They Need to Perform Well?

- 45% of Americans say that poor or insufficient sleep affected their daily activities at least once in a 7-day period, according to the National Sleep Foundation’s inaugural Sleep Health Index™. **

* Institute of Medicine, 2006
** National Sleep Foundation 4/22/2015
Vision
  » Achieving optimal health through better sleep.

Mission
  » The AASM improves sleep health and promotes high quality patient centered care through advocacy, education, strategic research, and practice standards.
AASM

- Significant resources

- Committed individuals
  - Members
  - Staff
  - BOD
  - Committees
  - Task Forces

http://www.aasmnet.org/aboutaasm.aspx
Sky is the Limit?
A Few Significant Challenges for Sleep Medicine, AASM

- Clinical practice
- Education
- Research
- Advocacy
Clinical Practice – Focus for Today

- Clinical practice
  - 1. The AHI, and insurers
  - 2. Workforce
  - 3. Technology
Challenge in Clinical Practice:

1. The AHI

- Focus on one number
- Focus on one test
- Focus on one disease
Challenge in Clinical Practice:

The AHI

Challenge in Practice:

- AHI is valuable in clinical practice
Challenge in Practice:

- AHI is valuable in clinical practice
- ... but less informative than many realize in prediction of outcomes:
  - measures of sleep or sleepiness
  - patient symptoms
  - concurrent morbidity
  - future health consequences
Figure 1.—Mean sleep latency (MSL) on the multiple sleep latency test is plotted against the apnea/hypopnea index (AHI) for all patients except three who had AHI>15 and MSL<3.
Children with obstructive sleep apnea show “normal” sleep stage distribution.
Patient symptoms vs. AHI

*Epworth Sleepiness Scale score regressed on AHI and min O2 among consecutive patients evaluated for possible OSA*

<table>
<thead>
<tr>
<th>Explanatory Variable(s) in Model</th>
<th>N</th>
<th>Entire Model</th>
<th>Variable</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>R²</td>
<td>p</td>
</tr>
<tr>
<td>AHI mO2</td>
<td>237</td>
<td>.0105</td>
<td>.2894</td>
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OSA measures vs. concurrent morbidity

In Sleep Hearth Health Study …

- AHI did predict Epworth scores (a very little bit)
- … and snoring still predicted ESS after AHI taken into account

Why is monitoring sleep no longer required to Dx OSA?

- CMS: “due to the evidence demonstrating that no combination of diagnostic procedures adequately identifies all of those beneficiaries who will benefit from CPAP …”

https://www.cms.hhs.gov/mcd/viewdraftdecisionmemo.asp?from2=viewdraftdecisionmemo.asp&id=204&
Growth of Home Sleep Apnea Tests (HSATs)

- Whereas Medicare allows HSATs, many insurers now require them

- Insurers have imposed use of HSATs
  - Evidence, guidelines not followed
  - RERA’s and RDI ignored
  - AHI ≠ RDI ≠ REI (respiratory event index)
Dx and Rx of OSA

- AHI ≥ 5.00 required to cover treatment
  - AASM recommended AHI?
  - AASM acceptable (Medicare) AHI?
  - AHI that is really an REI (events per hour monitored)?

- What about
  - H & P?
  - Quality of Life?
  - Age?
**Polysomnography / HSAT**

- Focus on one diagnostic test
  - Blinds clinicians and insurers to additional, important clinical expertise of BCSMP
  - Often limited to one night of study
  - Limits innovation needed to improve on an imperfect measure
  - No new CPT code for sleep in many years

- Results of *single* imperfect test can harm patients
Focus on one disease

» Are patients with 70+ other sleep diseases optimally served?

» Are OSA patients with comorbid sleep disorders fully treated?
Opportunities

- Insurer Policy Review Committee
- ASMF: Health services research
  - Enhance and demonstrate value
  - Evolve field
- Advocacy and Education
  - Cognitive value of BCSMP services
  - Services of a Sleep Center team
  - Outcomes of treatment for sleep diseases
Mandatory

The mandate of the Committee is to develop from AASM guidelines clear and concise recommendations for insurer policies, and then assess insurer adherence to these recommendations.
Opportunities in Clinical Practice:
Insurer Policy Review Committee

Goals:

» Develop concise recommendations that insurers should use for their policies.

» Distribute the recommendations to payers and members.

» Encourage correct use of recommendations by insurers.

» Create and maintain a public, online scoreboard to highlight adherence – or not -- by selected insurers to published AASM policies.
Opportunities in Clinical Practice:
Research to Improve Practice

Strategic Research Awards focus on:
“assessment, improvement, or innovation of strategies to achieve optimal outcomes, quality, cost-effectiveness, or value in delivery of sleep healthcare in the United States”

http://www.discoversleep.org/researchaward.aspx
Opportunities in Clinical Practice:

Health Services Research

- Potentially responsive application topics:

  1. Examine the economic impact of effective treatment of sleep disorders
  2. Evaluate effectiveness or cost-effectiveness of telemedicine
  3. Assessment of marketed sleep related apps and devices
  4. Assess effectiveness or cost-effectiveness of insurer HSAT policies
  5. Assess clinical value of in-lab PSG findings other than the AHI or RDI
  6. Assess outcomes of Auto-CPAP vs. traditional in-lab CPAP titration
  7. Evaluate models for collaboration between BCSMPs and PCPs within the Accountable Care Organization (ACO) environment

http://www.discoversleep.org/researchaward.aspx
Opportunities in Clinical Practice:
Funded Strategic Research Awards

- Building a medical neighborhood for sleep medicine
- CBTI for comorbid insomnia in chronic migraine: A proof of concept study using an online platform
- CBTI in persons with traumatic brain injury
- Development and validation of a screening tool for SDB in Pregnancy
- Quantifying the diagnostic and therapeutic utility of wrist actigraphy in insomnia
Opportunities in Clinical Practice:

Funded Strategic Research Awards

- Your next application ??
Opportunities in Clinical Practice:
Advocacy and Education

- Increase awareness of
  1. Value of BCSMP “cognitive” evaluation
  2. Services of a Sleep Disorders Center team
     - RPSGT, PA or NP, Nurse, RT, Pt. Services Rep.
  3. Outcomes and value of treatment for sleep diseases
Challenge in Clinical Practice:

2. Workforce

- Prevalence of sleep disorders makes sleep medicine a public health issue
  - OSA: 6-8%
  - Chronic Insomnia: 10%
  - RLS: 10%
  - Short-Term Insomnia Disorder: 15-20% / year
  - Jet Lag Disorder: ?
  - Sleep Enuresis: ?
  - Sleep Related Bruxism: ~ 10%
  - Sleep Related Leg Cramps: 33% of adults >60
Challenge in Clinical Practice:

Workforce

- Number of ABMS-Certified Sleep Medicine Physicians (BCSMPs):
  - 5,679 (many likely part-time in sleep)
  - About 1 for each 56,000 inhabitants of US
  - Distribution highly uneven

- Number of AASM-accredited Sleep Disorders Centers:
  - ~ 2,500
  - About 1 for each 128,000 inhabitants of US
Challenge in Clinical Practice:

Workforce

Figure 1: AASM Accredited Sleep Centers
Challenge in Clinical Practice: Workforce

Figure 4: Sleep Specialists
Challenge in Clinical Practice:

Workforce

BCSMP By State

Value 12.0 180 349

AASM
Challenge in Clinical Practice:

Workforce

- Compensation for insufficient workforce?:
  - Thorough med school sleep curricula??
  - Mandatory training during residencies??

- Consequences:
  - Many patients with sleep disorders unrecognized
  - Many patients with sleep disorders untreated
  - Long waitlists at sleep clinics
Challenge in Clinical Practice:

Workforce

- **Compensation for insufficient workforce?:**
  - Thorough med school sleep curricula??
  - Mandatory training during residencies??

- **Consequences:**
  - Many patients with sleep disorders unrecognized
  - Many patients with sleep disorders untreated
  - Long waitlists at sleep clinics
  - Overall health of US population likely to suffer substantially
Potential Opportunities:
Grow Workforce: New Front Lines?

- Develop new, defined partnerships between accredited Sleep Centers and:
  - Primary Care Physicians
  - Advanced Practice Professionals
  - Pulmonologists
  - Neurologists
  - Psychologists
  - Psychiatrists
  - Dentists
Potential Opportunities:
Training to Create New Portals to Sleep Center

- Develop training for clinicians in practice
  - AASM or ABMS-sponsored CME
  - Recognized and respected programs
  - Convenient; partly or wholly online?
  - Catered and specific to each:
    - Specialty
    - Clinician type
    - Function within Sleep Center ecosystem
  - Terminal examination by ABSM
  - Electronic mechanisms, telemedicine, to strengthen effectiveness of collaboration with accredited Sleep Center
Strengthen Centers, Improve Access, Increase Effectiveness

- Evolve sleep center accreditation, quality metrics to emphasize collaboration with certified partners.
- Use cross-practice integrated electronic health record (EHR) to:
  - Maximize functionality of Sleep Center & its ecosystem
  - Optimize communication and coordination in ecosystem
  - Track outcomes
  - Demonstrate value and cost-effectiveness
Almost every aspect of sleep medicine practice now depends on digital technology:

» Interview of patient
» Questionnaires
» Studies in lab or at home
» Analysis of data
» Prescription of therapy
» Monitoring adherence and outcomes
» Reimbursement
Challenge in Clinical Practice:

Wearables Focus Attention on Sleep

http://www.wired.com/2013/12/wearable-computers/
Challenge in Clinical Practice:

... And also present new challenges

- Hugely popular
- Accepted as science by some patients
- Difficult for clinician to interpret
- Present pitfalls if provide misleading data
Challenge in Clinical Practice:

Technology

- Different platforms at each stage means:
  - Lack of compatibility between
    - Information systems
    - Equipment platforms (e.g., wearable, PSG, HSAT, CPAP, actigraphy)
  - Barriers to access for practitioner
    - Who owns data?
    - PHI and HIPPA
  - Lack of convenient access for patient
  - Miscommunication & failed communication
Challenge in Clinical Practice: Technology

**Different platforms at each stage means:**

- Lack of compatibility between
  - Information systems
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- Miscommunication & failed communication

= Failure to execute BCSMP’s treatment plan; missed opportunities for optimal outcomes
**Potential Opportunities:**

**Technology**

- Could we have a unified electronic platform?
  - Real-time cross-talk between devices and EHR
  - Storage of data and reports in EHR used by clinicians
  - Security assured … but at the same time:

- Accessible
  - By clinician from any site
  - By other members of care team
  - By patient in summary format
Potential Opportunities:

Technology

- Telemedicine
- Welltrinsic
- Industry partners
What is Telemedicine?

The exchange of a patient’s medical information from one site to another via electronic communications to improve a patient’s clinical health status.
State Medical Board – Special License Requirements for Telemedicine

- **Telemedicine Specific Licensure or Registration Required (10 states)**
- **No Telemedicine Specific Licensure or Registration Required (40 States and Washington D.C.)**
State Legislation – Mandated Coverage

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Legislation Mandates Private Payer Coverage
(20 states and Washington D.C.)

Legislation Does Not Mandate Private Payer Coverage
(30 States)
New Care Paradigm: TeleSleep

- Patient Screening
- Diagnostic Evaluation
- Diagnostic Test
- Test Interpretation
- Management Plan/Long Term Management
- Initiation of Therapy
- Monitor and Report Outcomes
TeleSleep: Diagnostic Evaluation
TeleSleep: Diagnostic Test

- Provide pre-test education to patients via mobile and internet-based education
- Integrate HSAT and PSG into AASM accredited sleep centers and hospital EMR
TeleSleep: Initiation of Therapy

- Integration of APAP for remote PAP titration where appropriate

  **BCSMP-to-Patient visit**
TeleSleep: Management Plan and Long-Term Management

- Treatment education delivered via internet-based and mobile health media
- Automated phone calls to encourage adherence and identify problems
TeleSleep: Monitor Outcomes

- PAP or oral appliance adherence monitored using internet-based tools
- Modem technology
Potential Opportunities:

Technology

- **Welltrinsic**

- **Industry partners**
  - Somnoware
  - SHUT-I
  - Night Shift
Conclusions

If the sky is the limit …

Is this the dawn of new era?
Conclusion

- Potential for what Sleep Medicine can offer:
  - Virtually unlimited
  - Largely untapped
  - Challenges exist
Conclusion

- Challenge 1: AHI -- one number, one test, and one disease

- Opportunities:
  - Insurance Policy Review Committee
  - ASMF – Health Services Research
  - Advocacy and Education
Conclusion

- **Challenge 2: Workforce**
  - 1 BCSMP: 56,000 persons

- **Opportunities:**
  - New “Front Lines”
  - Develop Sleep Disorders Center “Ecosystem” with defined roles, requisite education, and improved lines of communication
Challenge 3: Technology – Sleep medicine depends heavily on digital platforms that are growing fast, and poorly integrated.

Opportunities:
- TeleSleep
- Welltrinsic
- Industry partners