Date: May 19, 2014

To: Health IT Policy Committee Meaningful Use Workgroup

From: Paul Dogrhamji, MD

Re: Support for Sleep Assessment as a Meaningful Use Core Objective

I appreciate the opportunity to submit this comment to the Health IT Policy Committee (HITPC) Meaningful Use Workgroup. As a primary care physician, I recognize the importance of the meaningful use of electronic health records, and I thank the HITPC for your work in advancing health IT.

I am writing to support adding sleep assessment as a Core Objective for Meaningful Use Stage 3. The attached document, "**Sleep Assessment as a Meaningful Use Core Objective Recommendation,**" demonstrates that sleep assessment is a vital aspect of health, wellness, and clinical evaluation and should be a component of the Meaningful Use program. The National Sleep Foundation (NSF) presented this recommendation to Department of Health and Human Services staff earlier this month.

Sleep assessment, whereby a physician queries a patient regarding sufficient sleep, is a simple but effective means of promoting health, increasing patient engagement, and decreasing cost of care. Further, sleep assessment is applicable to all populations and nearly all medical specialties.

This week, the HITPC Meaningful Use Workgroup will be considering comments from Meaningful Use users and stakeholders to aid in progression toward Stage 3, focusing on certain themes. The addition of sleep assessment as a Meaningful Use Core Objective relates directly to several of the emphasis areas identified by the HITPC as supportive of its goals, including:

1. Population management- Sleep disturbance is ubiquitous in the U.S. population because of poor sleep habits and hygiene, symptoms from medical conditions, and sleep disorders. Widespread use of basic sleep assessment would promote health and wellness, prevent potential illnesses, and identify existing conditions.

2. Patient engagement- Recent research has shown that lack of sleep can be a barrier to patient engagement and adherence to medication. In addition, consumers find self-reporting sleep sufficiency to be a meaningful interaction with their physicians, and it increases patient satisfaction.

3. Clinical decision support- The attached documentation demonstrates how the recommended sleep assessment Core Objective could be integrated into the flow of patient care, including the availability of support for clinical decision making for nearly all primary care and specialty physicians.

I endorse the NSF's recommendation to include sleep assessment as a Meaningful Use Core Objective. Inclusion of sleep assessment in the program would continue to build on the success of parallel assessments such as vital signs and tobacco use, which helped to engage physicians and patients in the meaningful use of health IT and are relevant to standard health assessment. A sleep assessment objective would be useful and aligned with my own practice, and I strongly believe that including sleep assessment in meaningful use would improve health and health care.

Should the HITPC want more information on this important topic, I would be happy to provider further comments. I can be contacted at pdoghramji@comcast.net.

Thank you,

Paul Dogrhamji

NATIONAL SLEEP FOUNDATION

Date: May 2, 2014

To: Kevin Larsen, MD, Medical Director, Meaningful Use, Office of the National Coordinator

Elise Anthony, JD, Senior Policy Advisor, Meaningful Use, Office of the National Coordinator

Elisabeth Myers, MBA, Policy and Outreach Lead, Office of eHealth Standards and Services, Centers for Medicare & Medicaid Services

From: David Cloud, CEO, National Sleep Foundation

CC: John Rancourt, MPA, Program Analyst, Office of the National Coordinator

Re: **Sleep Assessment as a Meaningful Use Core Objective Recommendation**

On April 4, 2014, representatives from the National Sleep Foundation (NSF) met with officials from the Department of Health and Human Services (HHS) regarding NSF's proposal to add sleep assessment as a Core Objective to Stage 3 of the Meaningful Use program. NSF presented peer-reviewed evidence and expert consensus on the vital contribution of sufficient sleep to health and wellness. Further, assessment of this basic aspect of health is related directly to advancing each of the aims of the National Quality Strategy (NQS) and thereby merits inclusion as a core component of Electronic Health Record (EHR) use. As follow-up to the meeting, NSF is providing additional evidence and supporting documentation to inform inclusion of sleep assessment in the program.

This document contains the following topics:

I. Sleep Assessment Objective: Recommended Wording and Structure

II. Desired Outcome from Sleep Assessment

III. Applicability to Multiple Medical Specialties

IV. Evidence of Sleep Assessment's Potential for Improvement

V. Evidence to Support the Importance of Sleep Assessment to Consumers

VI. Additional Recommendation Regarding Patient Portals and Patient-Reported Data

Please do not hesitate to contact me if any additional information would be helpful to move this important topic forward.

I. Sleep Assessment Objective: Recommended Wording and Structure

NSF developed the proposed sleep assessment objective within the following parameters:

1. The sleep assessment objective should comply with standards, structures, and requirements that were successfully applied for other objectives in Stages 1 and 2.

2. The objective should be simple to comprehend and easy to execute for caregivers and easy to implement for EHR developers.

3. The assessment should pose a minimal burden of time and effort on providers.

4. The assessment should produce a result that will be clinically useful for a wide range of clinician generalists and specialists.

5. Because an initial sleep assessment is qualitative, clinicians should be allowed some flexibility in how they assess sleep sufficiency and how to proceed based on the clinician's response.

6. The assessment should utilize validated medical terminology and guidelines where possible.

The Sleep Assessment Objective recommendation below follows the example set by previous objectives, including the Tobacco Assessment and Vital Sign Measurement Objectives, which also facilitate clinician assessment of critical health determinants.

Recommended Meaningful Use Objective: Record Sleep Sufficiency Status as Structured Data

Measure:

For Eligible Providers (EPs): More than 80 percent of all unique patients have sleep sufficiency status recorded as structured data.

For Eligible Hospitals (EHs) and Critical Access Hospitals (CAHs): More than 80 percent of all unique patients admitted to the inpatient or emergency department have sleep sufficiency status recorded as structured data.

Definitions:

For EPs, EHs, and CAHs: "Unique Patients"- If a patient is seen by an EP more than once during the EHR reporting period, then for purposes of measurement that patient is only counted once in the denominator for the measure. All the measures relying on the term ''unique patient'' relate to what is contained in the patient's medical record.

For EHs and CAHs: "Admitted to the Emergency Department"- Hospitals can decide to attribute patients who are either (a) admitted to inpatient care through the emergency department or are (b) admitted and treated in an emergency department observation unit/services area.

Attestation Requirements:

- Numerator- Number of unique patients who have their sleep status recorded in their EHR as structured data.
- Denominator- For EPs: total number of unique patients seen during the measurement year. For EHs and CAHs: total number of unique patients admitted to the inpatient or emergency department (as per definition) during the measurement year.
- Threshold- The resulting percentage must be more than 80 percent for an EP or more than 50 percent for an EH or a CAH to meet this measure.
- Exclusions- Newborn infants on hospital discharge

Certification Criteria: We propose that the standards and certification criteria for this objective align with those established in the 2014 EHR Certification Criteria at §170.314 to support the performance of the proposed MU objective and measure. In defining sleep sufficiency status, this capability requires, at a minimum, the ability to electronically record, modify, and retrieve the sleep sufficiency status of a patient in accordance with the designated standard.

Certification Standard: Sleep sufficiency status must be coded with one of the following SNOMED terms:

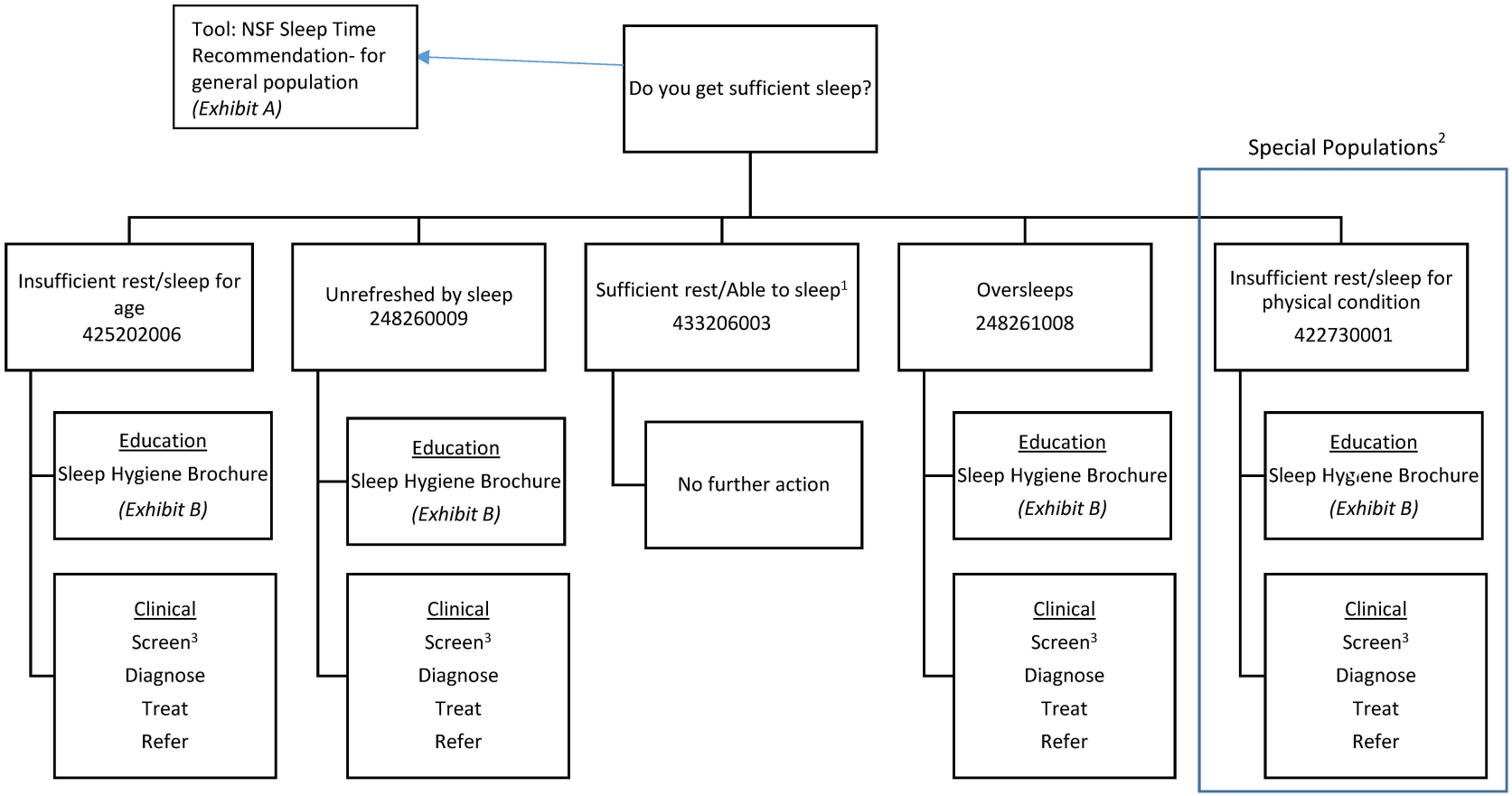
1. 422730001 Insufficient rest/sleep for age
2. 248260009 Unrefreshed by sleep
3. 433206003 Sufficient rest/able to sleep
4. 248261008 Oversleeps
5. 422730001 Insufficient rest/sleep for physical condition

II. Desired Outcome from Sleep Assessment

Sleep is vital to health. Sleep assessment, whereby a clinician queries for patient-reported information regarding sleep sufficiency, is a simple but effective means of promoting health, increasing patient engagement, and decreasing cost of care. It is a relatively simple, yet powerful, step that is applicable to all populations and all medical specialties and has the potential for yielding a large, positive impact on the health of the population.

The flowchart on the next page demonstrates how the recommended sleep assessment objective could be integrated into the flow of patient care.

As constructed, the Sleep Assessment Objective would provide the clinician leeway in pursuing different actions, assessments, tools, or diagnostic procedures that would fall under each clinician specialty and scope, though the flowchart provides support for clinical decision making.



[1]The SNOMED code "Able to sleep" is imprecise. We suggest the term should be augmented to include "sufficient rest"

[2]Examples of special populations include pregnant women, hospitalized patients, post-operative patients, and patients in pain

[3]Three validated sleep screeners we suggests are the Epworth Sleepiness Scale (*Exhibit C),* STOP screener for sleep apnea (*Exhibit D),* or the ISI screener for Insomnia *(See Exhibit E)*

III. Applicability to Multiple Medical Specialties

The following table demonstrates the applicability of sleep assessment for a wide range of specialty practices. Sleep assessment, as an important aspect of general health and wellness, is directly applicable to primary care practices (e.g., internal medicine, pediatrics, nurse practitioners). The associated references are included in Appendix B.

Specialty	Examples
Cardiology	Short sleep duration linked to cardiometabolic disease[1,2], insomnia linked to cardiovascular disease[3-5], restless legs syndrome associated with cardiovascular disease[6,7], poor sleep quality associated with cardiovascular disease[8], sleep apnea associated with cardiovascular disease[9-17].
Neurology	Sleep disturbances an important indicator after mild traumatic brain injury[18], more severe brain injury[19,20], and in disorders of consciousness[21], dementia and other neurological diseases[22-30], and neurologic sleep disorders including narcolepsy[31-36], REM sleep behavior disorder (which is a major risk factor for Parkinsons-like dementias)[35,37,38], and other conditions.
Psychiatry	Sleep disturbance is a cardinal feature of most Axis I disorders[39], insomnia is a major risk factor for mental illness[40-44], depression is common in Sleep Apnea[45], sleep symptoms are major features of post-traumatic stress disorder[46], sleep disturbances are a major risk factor for suicide ideation, attempt and completion[47], and sleep disturbances play a role in psychiatric treatment success[48-56].
Ophthalmology	The eye is the critical organ for taking in light, which is the primary exogenous regulator of biological rhythms[57-59]. Problems at the level of the eye may present as impaired vision; but these patients may also have profound circadian disruption[60-68], which can have important effects on health and functioning.
Gastroenterology	Occult gastroesophogeal reflux is a common source of sleep problems[69]. Also, as noted below, sleep is an important factor in pain.
Pulmonology	Sleep apnea is one of the most common pulmonary disorders and its treatment is often overseen by pulmonologists. Also, sleep problems are relevant in asthma[70,71], chronic obstructive pulmonary disease[72-75], and other respiratory conditions[76-78].

Specialty	Examples
Obstetrics-Gynecology	Sleep complaints are a major feature of premenstrual dysphoric disorder[79-81] and are some of the most disruptive features of menopause[82-90]. Sleep in women is a major issue in general[91-94]. Regarding obstetrics, maternal sleep is an important factor in fetal development and pregnancy outcomes, though sleep problems are common in pregnancy[95-109].
Anesthesiology	Sleep is relevant for anesthesiology, since both fields involve mechanisms of reduced consciousness[110-113]. Sleep assessment is recommended in the peri-operative process in order to avoid post-operative complications[250]. Some children (including children) acquire sleep disturbance after surgery[251].
Orthopedic Surgery	Sleep disturbance is an important factor in carpal tunnel syndrome[114]. Sleep apnea is an important factor to track orthopedic outcomes[115-117].
Pain Management	There is an extensive literature linking pain and impaired sleep[18,118-125]. Pain worsens sleep, and sleep loss worsens pain perception and sensitivity. Increased sleep time and reduced sleepiness may reduce pain sensitivity. Also, most pain medications have effects on sleep.
Pediatrics	Profound changes in sleep occur in infancy and childhood, and sufficient sleep is critical for proper development[126,127]. Sleep is a very important indicator of health and disease in infants[128-150], children[70,71,151-166], and adolescents[155,167-179].
Urology	Nocturia is an important marker of risk in urology[180-186].
Nephrology	Sleep problems are common in kidney diseases and are associated with severity[187].
Dermatology	There is some evidence that poor sleep quality is associated with skin aging[188]. Also, note the relationships between sleep and both allergy and pain, which are relevant for dermatology.
Emergency Medicine	Sleep loss is a major risk factor for accidents and injury[189-200]. For example, the engineer at the controls of the speeding Metro-North train that killed four people in the Bronx in 2013 when it derailed had sleep apnea, which was deemed as the cause of the crash.
Otolaryngology	This specialty frequently treats airway obstructions that may cause sleep apnea[201-206]. Also, the gold standard treatment of childhood sleep apnea is airway surgery[207,208]. Some airway surgeries can improve or worsen sleep apnea[209-216].
Allergy/Immunology	Sleep disturbances are common in allergy and may be a risk for sleep deprivation or sleep-disordered breathing[203,217-221].

Specialty	Examples
Oncology	Sleep is one of the most common symptoms experienced in the context of cancer and among cancer survivors[222-234]. Also, sleep problems are one of the main reasons that cancer survivors seek medical care[235].
Geriatrics	Age is a major risk factor for insomnia, sleep apnea, and other sleep disorders[65,236-239]. Sleep is commonly disturbed in the elderly[240], but healthy older adults rarely report that their sleep problems interfere with functioning[91,241,242].
Endocrinology	Sleep is an important factor in diabetes[2,243-246], and many hormones are partially controlled via sleep-wake rhythms[247].
Surgery	Preoperative sleep complaints predict worse postoperative outcomes[248]. Sleep is related to physical function and emotional well-being after cardiac surgery[249]. Sleep assessment is recommended for peri-operative care[250]. Some children (including children) acquire sleep disturbance after surgery[251]. Sleep disturbance following surgery can affect immune response[252].

IV. Evidence of Sleep Assessment's Potential for Improvement

During the April 4 meeting, NSF presented authoritative statements and evidence on the widespread occurrence of sleep insufficiency in the population, and the positive results achieved when sleep is assessed. NSF also presented data from a 2002 survey of 580 physicians in which only 43% reported regularly asking about sleep, despite broad acceptance of the importance of sleep assessment. Additional evidence to support potential for improvement of sleep assessment, and thereby health and wellness, includes the following:

- A 2008 study (Sorscher, *Journal of the American Board of Family Medicine*) found that less than half of health history database forms used in primary care practices in Minnesota contained sleep-related questions (compared to 93% that had questions on healthy eating).

- Meltzer and colleagues (2010, *Pediatrics*) found that less than 4% of children in the primary care records they assessed had any sleep disorder diagnosis in their records, which is far below the prevalence rates demonstrated through epidemiological studies (which, depending on the condition, can range from 5-35% of the population), suggesting that sleep issues may be underdiagnosed or underreported for that pediatric population. They further found that those children who were diagnosed with a sleep problem often did not have a recorded sleep-related recommendation.

- A recent paper by Michael Grandner (2013, *Journal of the National Medical Association)* reported that low percentages of women (8-23%) reported having either discussed sleep issues with their doctor of having been counseled on "regular and adequate sleep" by their physicians.

- Work by Reid et al. (2006, *American Journal of Geriatric Psychiatry*) found that nearly 70% of elderly patients surveyed at primary care facilites had at least one sleep complaint, but sleep compalaints were only recorded by physicians in 19% of patient charts. The study further found that "sleep complaints predicted the general physical and mental health-related quality-of-life status in elderly populations."

- A 2010 poll by NSF of racial disparities in sleep assessment found that 48% of white patients reported that their physician asked about sleep, with significantly smaller percentages reported by patients of minority races (42% of black patients, 40% of Hispanic patients, and only 28% of Asian patients). These results echoed those of NSF's previous 2005 poll "Sleep in America", which found that 70% of of overall American patients responded that their doctor did not ask about their sleep habits.

These studies show that sleep assessment is underreported and underutilized in clinical care, and without sleep assessment, physicians do not know about patients' health risks from insufficient sleep.

V. Evidence to Support the Importance of Sleep Assessment to Consumers

The sleep sufficiency assessment is not only an important part of clinical care, as evidenced by the previously cited literature, but it is also something consumers think is meaningful and increases patient satisfaction.

A 2011 Halfon et al. study in *Pediatrics* found that increased pediatrician time with parent and baby during well child visits including receipt of anticipatory guidance (on topics which include sleeping positions, night waking, fussing, and bedtime routines) increased parent overall satisfaction.

Published recommendations by the health policy committee of the Society of Behavioral Medicine and the National Institutes of Health (NIH) (Estabrooks et al., 2008, *Journal of the American Medical Informatics Association*), included a proposed list of core behavioral, psychological, and patient characteristics and associated measurement tools "that could be integrated into an EHR." A three-phased process was used to conceptualize, identify, and recommend patient-reported data elements on health behaviors for EHRs. Recommendations were finalized through a town hall meeting with key stakeholders including *patients,* providers, researchers, policy makers, and representatives from healthcare settings. Qualifications for characteristics on the list included those that were: (1) prevalent in the population; (2) strong determinants of health; (3) regularly encountered in primary care and public health settings; (4) relevant to how physicians deliver care; and (5) actionable. The list included items already in the Meaningful Use objectives and measures, such as tobacco use, eating habits, and physical activity. *Sleep quality also had strong multi-stakeholder support and was recommended to be incorporated into EHRs.*

A 2005 "Sleep in America" poll by NSF found that while 70% of American patients responded that their doctor did not ask about their sleep habits, 89% of patients responded that they thought their physician *should* ask about sleep.

VI. Additional Recommendation Regarding Patient Portals and Patient-Reported Data

NSF recommends inclusion of requirements related to patient portals and patient-reported data in Stage 3 of the MU program. Rapid developments in apps and devices that track sleep duration have occurred in the private sector. Standard health and fitness wearables (e.g. FitBit, Jawbone UP, Nike Fuelband) track the three essential components of health—sleep, diet, and exercise. In 2013, ABI research reported there were 32.46 million of these devices purchased. That number is projected to rise to over 50 million by 2015. The explosive growth of wearable sleep trackers, smart phones, tablets, and mobile applications to track sleep increases the ability for enhanced patient self-monitoring of sleep and patient-generated health data. Patients reporting sleep data to their physicians, as well as entering into patient portals, facilitates strengthened connection with their provider, increased engagement in their own health, and promotes monitoring of sleep patterns to identify serious medical or mental illnesses.

Although NSF has not done a review of the technical compatibility of these devices to EHR web portals, we believe that the ability of patients to self-report their sleep status or sleep duration would be a useful and practical demonstration of the ability of providers to make EHRs more practical for patients and interoperable with patients' commercial devices.

Data from: http://mobihealthnews.com/29532/abi-90m-wearable-devices-to-ship-in-2014/

Language from: http://www.healthit.gov/sites/default/files/pghd_brief_final122013.pdf

Appendix A- Sleep Time Recommendations, Educational Materials, and Screeners

Exhibit A: Sleep Time Recommendations

How Much Sleep Do You Really Need?	
Age	**Sleep Needs**
Newborns (0-2 months)	12-18 hours
Infants (3 to 11 months)	14 to 15 hours
Toddlers (1-3 years)	12 to 14 hours
Preschoolers (3-5 years)	11 to 13 hours
School-age children (5-10 years)	10 to 11 hours
Teens (10-17)	8.5-9.25 hours
Adults	7-9 hours

Source: National Sleep Foundation

Exhibit B: Sleep Hygiene Brochure

What is sleep hygiene?

Sleep hygiene is a variety of different practices that are necessary to have normal, quality nighttime sleep and full daytime alertness.

What are some examples of good sleep hygiene?

The most important sleep hygiene measure is to maintain a regular wake and sleep pattern seven days a week. It is also important to spend an appropriate amount of time in bed, not too little, or too excessive. This may vary by individual; for example, if someone has a problem with daytime sleepiness, they should spend a minimum of eight hours in bed, if they have difficulty sleeping at night, they should limit themselves to 7 hours in bed in order to keep the sleep pattern consolidated. In addition, good sleep hygiene practices include:

- **Avoid napping during the day.** It can disturb the normal pattern of sleep and wakefulness.
- **Avoid stimulants such as caffeine, nicotine, and alcohol too close to bedtime.** While alcohol is well known to speed the onset of sleep, it disrupts sleep in the second half as the body begins to metabolize the alcohol, causing arousal.
- **Exercise can promote good sleep.** Vigorous exercise should be taken in the morning or late afternoon. A relaxing exercise, like yoga, can be done before bed to help initiate a restful night's sleep.
- **Food can be disruptive right before sleep.** Stay away from large meals close to bedtime. Also dietary changes can cause sleep problems, if someone is struggling with a sleep problem, it's not a good time to start experimenting with spicy dishes. And, remember, chocolate has caffeine.
- **Ensure adequate exposure to natural light.** This is particularly important for older people who may not venture outside as frequently as children and adults. Light exposure helps maintain a healthy sleep-wake cycle.

- **Establish a regular relaxing bedtime routine.** Try to avoid emotionally upsetting conversations and activities before trying to go to sleep. Don't dwell on, or bring your problems to bed.

- **Associate your bed with sleep.** It's not a good idea to use your bed to watch TV, listen to the radio, or read.

- **Make sure that the sleep environment is pleasant and relaxing.** The bed should be comfortable, the room should not be too hot or cold, or too bright.

Why is it important to practice good sleep hygiene?

Sleep hygiene is important for everyone, from childhood through adulthood. A good sleep hygiene routine promotes healthy sleep and daytime alertness. Good sleep hygiene practices can prevent the development of sleep problems and disorders.

How does someone know if his or her sleep hygiene is poor?

Sleep disturbances and daytime sleepiness are the most telling signs of poor sleep hygiene. If one is experiencing a sleep problem, he or she should evaluate their sleep routine. It may take some time for the changes to have a positive effect.

How do I know the best sleep hygiene routine for me?

If you're taking too long to fall asleep, or awakening during the night, you should consider revising your bedtime habits. Most important for everyone is to maintain a regular sleep-wake schedule throughout the week and consider how much time you spend in bed, which could be too much or too little.

For more information about sleep hygiene, visit the National Sleep Foundation's website, sleepfoundation.org.

Exhibit C: Epworth Sleepiness Scale

It is important that you choose a number (0 to 3) for each of the eight boxes. Use this scale to choose the most appropriate number for each situation:

0- would never snooze
1- slight chance of snoozing
2- moderate chance of snoozing
3- high change of snoozing

Situation	Chance of Dozing (0 to 3)
Sitting and reading	0 1 2 3
Watching TV	0 1 2 3
Sitting inactive in a public place- for example, a theatre or move	0 1 2 3
As a passenger in a car for an hour without a break	0 1 2 3
Lying down to rest in the afternoon	0 1 2 3
Sitting and talking to someone	0 1 2 3
Sitting quietly after lunch (when you have had no alcohol)	0 1 2 3
In a car while stopped in traffic	0 1 2 3
Total score (Add all circled numbers)	

Total Score	Results
0-9	A total score less than 10 suggests you are not suffering from excessive sleepiness
10+	A total score of 10 or more suggests that you are experiencing excessive sleepiness and may need further evaluation by your doctor to identify that cause. For example, your doctor may determine that you have an underlying sleep disorder that is causing you to be excessively sleepy.

Exhibit D: STOP- Sleep Apnea

Height _____ inches/cm Weight _____ lb/kg

Age _____ Male/Female BMI _____

Collar size of shirt: S, M, L, XL, or _____ inches/cm

Neck circumference* _____ cm

1. *S*noring

Do you *s*nore loudly (louder than talking or loud enough to be heard through closed doors)?

Yes No

2. *T*ired

Do you often feel *t*ired, fatigued, or sleepy during daytime?

Yes No

3. *O*bserved

Has anyone *o*bserved you stop breathing during your sleep?

Yes No

4. Blood *p*ressure

Do you have or are you being treated for high blood *p*ressure?

Yes No

Scoring- 2 out of 4 qualifies as a positive test.

Exhibit E: Insomnia Severity Index *(ISI)*

1. Please rate the current (i.e., last 2 weeks) **SEVERITY** of your insomnia problem(s).

	None	Mild	Moderate	Severe	Very
Difficulty falling asleep:	0	1	2	3	4
Difficulty staying asleep:	0	1	2	3	4
Problem waking up to early:	0	1	2	3	4

2. How **SATISFIED/**dissatisfied are you with your current sleep pattern?

Very Satisfied				Very Dissatisfied
0	1	2	3	4

3. To what extent do you consider your sleep problem to **INTERFERE** with your daily functioning (e.g. daytime fatigue, ability to function at work/daily chores, concentration, memory, mood, etc.).

Not at all Interfering	A little	Somewhat	Much	Very Much Interfering
0	1	2	3	4

4. How **NOTICEABLE** to others do you think your sleeping problem is in terms of impairing the quality of your life?

Not at all Noticeable	Barely	Somewhat	Much	Very Much Noticeable
0	1	2	3	4

5. How **WORRIED/**distressed are you about your current sleep problem?

Not at all	A Little	Somewhat	Much	Very Much
0	1	2	3	4

Guidelines for Scoring/Interpretation:

Add scores for all seven items (1a+1b+1c+2+3+4+5) = ____

Total score ranges from 0-28

0-7 = No clinically significant insomnia

8-14 = Subthreshold insomnia

15-21 = Clinical insomnia (moderate severity).

22-28 = Clinical insomnia (severe)

Appendix B- References

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