



P1752 Sleep Schema Subgroup Meeting

Sponsored by IEEE Engineering in Medicine & Biology (EMB) Standards Committee

- 1 May 2018
- Teleconference

Attendance

- **Put your name and affiliation in the chat window for attendance today.**
- If you are joining only via phone, please email charlotte.chen@philips.com with “P1752 Sleep Schema Subgroup call” as subject
- The document shows attendance is under <https://ieeesa.imeetcentral.com/omh/folder/WzlwLDEwMjY4MDg1XQ/> (link in the chat window of join.me). (Future)
 - If you attended the call, please verify that your name is listed
 - If you name is not listed, email charlotte.chen@philips.com

Agenda

1. Attendance
2. Get to know each other
3. Review scope and deliverables
4. Review general plan (timelines)
5. Review initial list of clinical important sleep attributes (examples)
6. Propose “divide and conquer” approach
7. Make decisions
 - (1) The approach
 - (2) Meeting frequency
8. Q&A



Scope and Duties (Approved)

Scope

- The P1752 Sleep Schema Subgroup will review and propose Open mHealth schemas related to sleep. The scope includes but is not restricted to the following aspects of sleep: sleep macrostructure (e.g., sleep duration, sleep stages), sleep microstructure (e.g., arousals), subjective sleep (e.g., sleep refreshment), and other sleep-related phenomena (e.g., apnea). The focus of this Subgroup's work is on modeling data pertaining to sleep, and not on current or future individual devices or apps that measure various aspects of sleep.

Duties

- By reviewing the clinical aspects of sleep and existing relevant devices and apps, the Subgroup shall deliver a list of common attributes as well as a list of clinically important attributes in the domain of sleep as scoped above. The Subgroup shall propose modified and new schemas relating to sleep, including examples as informed by use cases and the list of common and clinically important attributes. Finally, the Subgroup shall deliver a review of mappings and/or relationships to non-Open mHealth sleep schemas.

Sleep Schema Subgroup Deliverables

- Clinically important sleep attributes
- Common sleep attributes of the existing relevant devices and apps
- Proposed sleep schemas (modified and new) and use cases
 - (1) Macrostructure
 - (2) Microstructure
 - (3) Subjective sleep experience
 - (4) Other sleep related phenomena
- Standard Comparison Report (Review and mapping)

Sleep Schema Subgroup Timeline

May 2, 2018

Start working on:

- clinically important sleep attributes
- common sleep attributes from devices & apps
- standard comparisons

June 8, 2018

Review (mid point):

- clinically important sleep attributes
- common sleep attributes from existing devices & apps
- standard comparisons

July 6, 2018

Report due on:

- clinically important sleep attributes
- common sleep attributes from existing devices & apps
- standard comparisons

July 7, 2018

Start working on Sleep Schemas and use cases

Sleep Schema Subgroup Timeline

Aug 3, 2018

1st Review on Sleep Schemas and use cases

Sept 7, 2018

2nd Review on Sleep Schemas and use cases

Oct 5, 2018

3rd Review on Sleep Schemas and use cases

Nov 2, 2018

- Propose Sleep Schemas and use cases
- All the deliverables are ready

Clinically Important Sleep Attributes (Examples)

Associated Health Outcomes	Sleep Measure/Attributes				
	Duration	Timing	Efficiency (SOL, WASO, WuTE)	Alertness/Sleepiness	Satisfaction/Quality
Mortality	✗	✗	✗	✗	✗
Metabolic Syndrome	✗	✗	✗		✗
Diabetes	✗	✗	✗		✗
Hypertension	✗		✗	✗	✗
Coronary heart disease	✗	✗	✗		✗
Depression			✗		✗
Impaired neurobehavioral performance	✗			✗	
Obesity	✗				
Impaired glucose function		✗	✗		✗

Clinically Important Sleep Attributes (Examples)

Associated Health Outcomes	Sleep Measure/Attributes								
	OSA	RLS	Micro-arousals	N3	N2	N1	REM	Spindles	Circadian phase/period
Mortality	✗								
Metabolic Syndrome	✗	✗							
Diabetes	✗								
Hypertension	✗								
Coronary heart disease		✗							
Depression	✗	✗							
Impaired neurobehavioral performance	✗								
Obesity									
Impaired glucose function									

Clinically Important Sleep Attributes References

- (1) <https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Understanding-Sleep>
- (2) <http://www.houstonsleep.net/HTML/Clinical-Approach.htm>
- (3) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3902880/>
- (4) <https://www.circadiansleepdisorders.org/info/PRC.php>
- (5) <https://www.researchgate.net/publication/3246257> Micro- and macrostructure of sleep EEG
- (6) <https://www.ncbi.nlm.nih.gov/pubmed/15564359>

Divide and Conquer Approach (pg. 1)

Stage 1:

- **Total** number of people in the subgroup: **19**
- Clinically important sleep attributes: **6**
- Common sleep attributes of the existing relevant devices and apps: **6**
- Standard Comparison Report (Review and mapping): **7**

Divide and Conquer Approach (pg. 2)

Stage 2:

- **Total** number of people in the subgroup: **19**
- Proposed sleep schemas (modified and new) and use cases
 - (1) Macrostructure **(4)**
 - (2) Microstructure **(5)**
 - (3) Subjective sleep experience **(5)**
 - (4) Other sleep related phenomena **(5)**

Proposed Meeting Frequency

Subgroup Meeting: once/month

---Tuesday 11:30am-12:30pm EST

---1st Tuesday of the month

Leads Meeting/Share Info: every two weeks

---Tuesday 11:30am-12:30pm EST

---3rd Tuesday of the month

Make Decisions on

- **“Divide and Conquer” Approach**

- Everyone is encouraged to review the results from the other group

- If agreed, need volunteers to lead each task group

- **Meeting Frequency**



Summary of Action Items

Email to charlotte.chen@philips.com

- Volunteers for leading the task groups
- Volunteer to take note for subgroup meeting

Future Meetings

- Continue with 1st Tuesday at 8:30 AM Pacific / 11:30 AM Eastern
- Upcoming meetings
 - May 15 (possible)
 - June 5

Adjournment