P1752 Sleep Schema Subgroup Meeting

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

- 4 June 2019
- 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://ieee-sa.imeetcentral.com/omh/folder/WzIwLDEwMjY4MDg1XQ/.
  - If you attended the call, please verify that your name is listed.
  - If your name is not listed, either edit the document above or email charlotte.chen@philips.com.
Agenda

1. Attendance
2. Modified timelines
3. Update from the qualitative schema task group
4. Update from quantitative schema task group
5. Schema Validation Discussion
6. Action Items
7. Q&A
Sleep Schema Subgroup Deliverables

- Clinically important sleep attributes
- Common sleep attributes of the existing relevant devices and apps
- Standard Comparison Report (Review and mapping)
- Proposed sleep schemas (modified and new) and use cases (quantitative and qualitative)
  1. Quantitative Measurement Schemas (including macrostructure, microstructure and etc.)
  2. Qualitative Measurement Schemas (including subjective sleep experience, other sleep related phenomena and etc.)
Timeline for Stage2 Remaining Work

- Complete reviewing Quantitative Sleep Schemas on March 21, 2019
- Complete drafting Qualitative Measure Schema Development by May 12, 2019
- Complete addressing comments for Quantitative Sleep Schemas by May 12, 2019
- Complete reviewing Qualitative Measure Schemas by May 31, 2019
- Validate Quantitative Schemas by (TBD)
- Validate Qualitative Measure Schemas by (TBD)
Thank you for your great work.
Qualitative Schema Task Group Updates (Banu)
Status

• Follow up of meeting held on May 7, 2019
  
  --- Completion of drafting identified survey schemas
  
  --- Feedback being received from members
  
  --- Responses to comments and suggestion initiated

https://ieee-sa.imeetcentral.com/omh/folder/WzIwLDExNjM1MTQwXQ
Updates on the Task

• Verification of permission / copyright issues of the identified schemas

  --- Study initiated by Charlotte and done by Banu

  --- Finding: Almost all the questionnaires require some kind of permission to use (except SSS).

Available at: https://ieee-sa.imeetcentral.com/omh/folder/WzIwLDExNjM1MTQwXQ/WzIsNjQ4OTQ0MzRd/
## Summary of Findings

### P1752 – Open Mobile Health WG

#### Details of Copyright/Permission Issues for the Qualitative Sleep Survey Questionnaires

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the Survey Questionnaire</th>
<th>URL</th>
<th>Status (From web page)</th>
<th>Addl. comments</th>
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<tbody>
<tr>
<td>1</td>
<td>Stanford Sleepiness Scale (SSS)</td>
<td>Available at <a href="https://web.stanford.edu/~dement/sss.html">https://web.stanford.edu/~dement/sss.html</a></td>
<td><strong>No known copyright issues</strong></td>
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<td>Epworth Sleepiness Scale (ESS)</td>
<td><a href="https://epworthsleepinessscale.com/about-the-ess/">https://epworthsleepinessscale.com/about-the-ess/</a></td>
<td><strong>Permission to use can be obtained</strong>&lt;br&gt;<strong>Contact:</strong> Murray W. Johns, PhD, Epworth Sleep Centre, Melbourne, Victoria, Australia. <a href="mailto:mjohns@optalert.com">mjohns@optalert.com</a></td>
<td>An annual license fee may be applicable if usage is “deemed commercial in nature.”</td>
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<td>3</td>
<td>Karolinska Sleepiness Scale (KSS)</td>
<td>Freely downloadable from <a href="https://www.med.upenn.edu/cbti/assets/user-content/documents/Karolinska%20Sleepiness%20Scale%20(KSS)%20Chapter.pdf">https://www.med.upenn.edu/cbti/assets/user-content/documents/Karolinska%20Sleepiness%20Scale%20(KSS)%20Chapter.pdf</a></td>
<td><strong>Authors:</strong> Akerstedt T; Gillberg M&lt;br&gt;&lt;<strong>Instrument copyrighted</strong> by Torbjörn Åkerstedt (<a href="https://eprovide.mapitrust.org/instruments/karolinska-sleepiness-scale">https://eprovide.mapitrust.org/instruments/karolinska-sleepiness-scale</a>)</td>
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<td>4</td>
<td>Pittsburgh Sleep Quality Index (PSQI)</td>
<td><a href="https://www.sleep.pitt.edu/research/instruments.html">https://www.sleep.pitt.edu/research/instruments.html</a> (<a href="https://eprovide.mapitrust.org/instruments/pittsburgh-sleep-quality-index">https://eprovide.mapitrust.org/instruments/pittsburgh-sleep-quality-index</a>)</td>
<td><strong>Permission to use can be obtained</strong> Copyright in this form is owned by the University of Pittsburgh and may be reprinted without charge only for non-commercial research and educational purposes.&lt;br&gt;&lt;<strong>Contact:</strong> Daniel J Buysse&lt;br&gt;Professor of Psychiatry&lt;br&gt;University of Pittsburgh School of Medicine&lt;br&gt;E-mail: <a href="mailto:buyssedj@upmc.edu">buyssedj@upmc.edu</a></td>
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<td>5</td>
<td>Insomnia Severity Index</td>
<td>Freely downloadable from <a href="https://www.ons.org/sites/default/files/InsomniaSeverityIndex_ISR.pdf">https://www.ons.org/sites/default/files/InsomniaSeverityIndex_ISR.pdf</a></td>
<td>To be used with permission \nCharles Morin, PhD, et al \nUniversité Laval, Canada \<a href="mailto:ncmorin@psy.ulaval.ca">ncmorin@psy.ulaval.ca</a></td>
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<td>OSA - Berlin</td>
<td>Freely downloadable from <a href="https://www.sleepapnea.org/wp-content/uploads/2017/02/berlin-questionnaire.pdf">https://www.sleepapnea.org/wp-content/uploads/2017/02/berlin-questionnaire.pdf</a> (<a href="http://cpap.1800cpap.com/tests/BerlinQuestionnaire.pdf">http://cpap.1800cpap.com/tests/BerlinQuestionnaire.pdf</a>)</td>
<td>To be used with permission from Annals of Internal Medicine (American College of Physicians) \nNC Netzer, MD, et al \<a href="mailto:nnikinetzer@yahoo.com">nnikinetzer@yahoo.com</a></td>
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<td>Questionnaire available in <a href="http://www.stopbang.ca/about/contactus.php">http://www.stopbang.ca/about/contactus.php</a></td>
<td>Property of University Health Network. Send Email to have permission to use the survey. \nToronto Western Hospital, University Health Network \nUniversity of Toronto (<a href="http://www.stopbang.ca/about/contactus.php">http://www.stopbang.ca/about/contactus.php</a>)</td>
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<td>8</td>
<td>Restless Leg Syndrome - Diagnostic Index (RLS-DI)</td>
<td>Available in an article at <a href="https://doi.org/10.1016/j.sleep.2008.06.006">https://doi.org/10.1016/j.sleep.2008.06.006</a> (Validation of an algorithm for the diagnosis of Restless Legs Syndrome: The Restless Legs Syndrome-Diagnostic Index (RLS-DI))</td>
<td>Non-Commercial Users may access available translations of the questionnaire directly. Author: The European Restless Legs Syndrome Study Group (EURLSSG) (<a href="https://eprovide.mapitrust.org/instruments/restless-legs-syndrome-diagnostic-index">https://eprovide.mapitrust.org/instruments/restless-legs-syndrome-diagnostic-index</a>)</td>
<td>Used for the limited purpose of examining the suitability of the Questionnaire for subsequent research and/or clinical use, and cannot be used in research or in clinical practice or distributed to others.</td>
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<td>9</td>
<td>Ullanlinna Narcolepsy Scale</td>
<td>Freely downloadable from <a href="http://healthysleep.med.harvard.edu/file/56">http://healthysleep.med.harvard.edu/file/56</a></td>
<td>To be used with permission</td>
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<td>10</td>
<td>Functional Outcomes of Sleep</td>
<td>Freely downloadable from <a href="https://www.gem-">https://www.gem-</a></td>
<td>Needs permission from developer Permission required, no cost</td>
<td></td>
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</tbody>
</table>
Action Items

-- Suggestion from Charlotte: To keep these schemas in place as references; but not open sourced (i.e. templates)

--- Response from Simona: To discuss this further with Ida and seek IEEE guidance on further steps
Quantitative Schema Task Group
Updates
Status

- Follow up of meeting held on May 7, 2019
  
  ---Completed addressing the review comments

Link to the drafted quantitative schemas and sample data (review folder):

[https://ieee-sa.imeetcentral.com/omh/folder/WzlwLDExNDI3OTI4XQ](https://ieee-sa.imeetcentral.com/omh/folder/WzlwLDExNDI3OTI4XQ)
List of reviewed & revised schemas and sample data:

--ambient_light
--ambient_sound
--apnea_hypopnea_index
--deep_sleep_percentage
--light_sleep_percentage
--sleep_body_movement
--sleep_onset_latency
--arousal_index
--wake_after_sleep_onset
--ambient_temperature
--sleep_episode
List of reviewed & revised schemas and sample data (Continued):

--sleep_stages
--snore_count
--time_in_bed
--total_sleep_time
Next Steps

- Quantitative schema validation
- WG review the schemas
- Address schema review comments from WG
- Support documentation effort when needed
Schema Validation Discussion (Simona)
Action Items

- Validate quantitative schemas:
  -- Coordinate with Simona
  -- Provide support

- Determine how to proceed for qualitative schemas and sample data (Simona will reach out to Ida and IEEE)
Future Meetings

• Continue with Tuesdays at 8:30 AM Pacific / 11:30 AM Eastern
• Upcoming meetings
  • July 2, 2019 (TBD)
Adjournment