IEEE P1752.2 CardioRespiratory Measures Subgroup
Minutes of conference call held on July 27, 2023

Conference call started at 15:00 UTC (8:00 AM Pacific Time) on IEEE Webex
Attendance:

wKevin	Clark	Cures Within Reach, NSF ACCESS
Carole	Carey	EMBS
Paul	Petronelli	PALM Associates
Vishnu	Ravi	Stanford Byers Center for Biodesign
Josh	Schilling	Vibrent Health
Ida	Sim	UCSF, Open mHealth
Paul	Steiner	Dartmouth College
Michael	Tsai	Kura Care

Agenda**:**

- Attendance and introductions
- Presentation: "Clinical parameters from the PPG signal in the diagnosis of CVD"
- Subschema Task Groups
- Other business

A presentation entitled "Clinical parameters from the PPG signal in the diagnosis of CVD" was given, which expounded on a broad range of cardiopulmonary parameters being acquired from PPG signals, in addition to discuss progress made on the measurement of a variety of time domain heart rate variability parameters using PPG and ECG signals. Blood pressure estimates also were included in this discussion.

Subsequently, the group then focused on issues related to coding for the cardiorespiratory schema, with comments addressing challenges related to each subschema grouping.

1) Subschema 1: Cardiac pulse & rhythm
2) Subschema 2: Blood pressure & hemodynamics
3) Subschema 3: Respiratory, including ventilatory & gas exchange metrics

Subschema construction informed by the desirability of further extensibility also was reviewed as contributing to the relevance of semantic interoperability in an important way across the broadest range of usage paradigms. Most of today's discussion focused on the subschema structure for cardiac pulse dynamics, with work moving forward to organize and develop code to model its key data metrics (while also attempting the facilitation of links both to rhythm analysis and to blood pressure & hemodynamics). One key matter identified is whether to model pulse as independent of ventricular depolarization, or otherwise consider it to be dependent (as actually it is from the vantage of modeling actual cardiac physiology); this in particular impacts how JSON sequential data structures are to be specified. For now, both approaches possibly will be developed to see what sort of coding limitations may be encountered. In addition, some anticipated "utility" parameters were discussed, such as a parameter to specify body location of sensors in combination with multisensory configurations.

A distinction was made between parameters relevant to individual instances of cardiac depolarization (or cardiac systole, or pulse) and to parameters relevant to sequences of these entities. It is anticipated that a both indexed arrays and associative arrays may be useful specifying objects that efficiently and effectively model multidimensional cardiovascular data.

The goal remains to try for completing an *initial* draft of a comprehensive cardiorespiratory schema that can be used as a springboard for further refinement later this autumn (before the end of the year), in anticipation of more active engagement of key stakeholders that have been identified.

Action Item:

       Subschema construction and JSON code development progress, with plan for monthly status updates going forward.

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Next meeting: September 7, 2023 at 15:00 UTC (8:00 AM Pacific Daylight Time), pending confirmation
Minutes taken by Paul Steiner (Dartmouth)