P1752.2
Cardiorespiratory Subgroup Teleconference

Working Group Sponsored by IEEE Engineering in Medicine & Biology Standards Committee

October 27, 2022
15:00 UTC
Cardiorespiratory Subgroup

Agenda
Oct 27, 2022

Attendance
Prior minutes & slides / complete, pending posting

Discussion: Use cases - Pt. 2
- Exercise physiology
  - Focus on exercise recovery
- Other considerations about cardiorespiratory fitness (CRF)

Other business
- Collaborations / stakeholder engagements
  AHA Conference (Nov 5-7, 2022, Chicago, USA)
- Next meeting: New proposal
P1752.2 Standard for Mobile Health Data

Cardiorespiratory Subgroup

Scope
The P1752.2 Cardiorespiratory (CR) Subgroup will review Open mHealth schemas related to CR measures and propose updates and additional schemas as needed. The scope includes but is not restricted to the following measures of CR health: blood pressure, heart rate, heart rate variability, RR interval, respiratory rate, and O2 saturation. The focus of this Subgroup’s work is on modeling data pertaining to CR function, not on current or future individual devices or apps that measure various aspects of CR health.

Duties
By reviewing the clinical aspects of CR health 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 CR domain as scoped above. The Subgroup shall propose modified and new schemas relating to CR health, 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 CR schemas.

https://sagroups.ieee.org/1752/cardio-respiratory-subgroup/
Fitness / Performance Paradigm

Use Case

Exercise Recovery

... continuation

Conner McCraw
Epidemiological Cardiology Research Center (EPICARE)
Wake Forest School of Medicine
Physical Activity

Overview

1. What happens during physical activity?
2. What happens during recovery from physical activity?
3. What are we capturing with mobile health?

Variables of interest:

- Hemodynamics (Q, BP, HR, TPR)
- Respiratory (Respiration Rate, Tidal Volume, Ventilation)
- Gas Exchange (VO2, VCO2)
- Heart Rate Variability (HRV)
- Symptoms (Rating of Perceived Exertion, Dyspnea, Angina)
Exercise as a vital sign...

https://www.cdc.gov/Pcd/issues/2017/17_0030.htm
https://www.mayoclinicproceedings.org/article/S0025-6196(19)31078-X/fulltext

Physical Activity

Overview

1. What happens during physical activity?
2. What happens during recovery from physical activity?
3. What are we capturing with mobile health?

Example:

AHA & PAA : HL7 FHIR

“Physical Activity Implementation Guide”
  • Fitness assessment as ‘vital sign’
  • P1752.2 schema component metrics

https://build.fhir.org/ig/HL7/physical-activity/measures.html#base
Maintain alignment with existing “gold standard” clinical data landscape.
Physical Activity

Overview

1. What happens during physical activity?
2. What happens during recovery from physical activity?
3. What are we capturing with mobile health?

Example:

AHA/ACC

"Variety of exercise stress test protocols…"

- Prognostic assessment
- P1752.2 schema component metrics

https://build.fhir.org/ig/HL7/physical-activity/measures.html#base
Use case paradigms for developing P1752.2 Cardiorespiratory Schemas

Maintain alignment with existing “gold standard” clinical data landscape

DiMe Society Playbook:
- Clinical Research
- Clinical Care
- Public Health
Recovery from Physical Activity

Overview

1. What happens during physical activity?
2. What happens during recovery from physical activity?
3. What are we capturing with mobile health?

Example:

Cleveland Clinic

“Heart Rate Recovery”

- Prognostic assessment
- P1752.2 schema component metrics

https://build.fhir.org/ig/HL7/physical-activity/measures.html#base
Use case paradigms for developing P1752.2 Cardiorespiratory Schemas

Maintain alignment with existing “gold standard” clinical data landscape

DiMe Society Playbook:
- Clinical Research
- Clinical Care
- Public Health
### Physical Activity Alliance

**‘Partners’**

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<thead>
<tr>
<th>American Institute for Cancer Research</th>
<th>APTA</th>
<th>American College of Lifestyle Medicine</th>
<th>American Heart Association</th>
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<td>UW Medicine</td>
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Listing of key stakeholders in the “Athleticism” paradigm

**Professional organization & industry**

**Other P1752.2 Open mHealth stakeholder entities**
Physical Activity Metrics

- Fitness & performance
- Health maintenance & wellness
- Chronic disease...

Example:

*Impact of cardiomyopathy/ heart failure*

(Metric deviations)
# Physical Activity & Mobility Subgroup

## Table 1

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Collaborations / Stakeholder Engagement

- MedTech Industry
- Data Industry
- Professional Organizations
- Advocacy Organizations

AHA Conference (Nov 5-7, 2022, Chicago, USA)
Next meeting:
November 17?, 2022 (15:00 UTC)

Change from 4th Thursday to 3rd Thursday of the month?