Health Self-Tracking: How Can Doctors Use Your Data?

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Personal tracking devices may hold information crucial for diagnosing, preventing, and managing illnesses. A participatory design study with doctors was conducted to identify the opportunities and barrriers for using self-tracked data in clinical decisions.

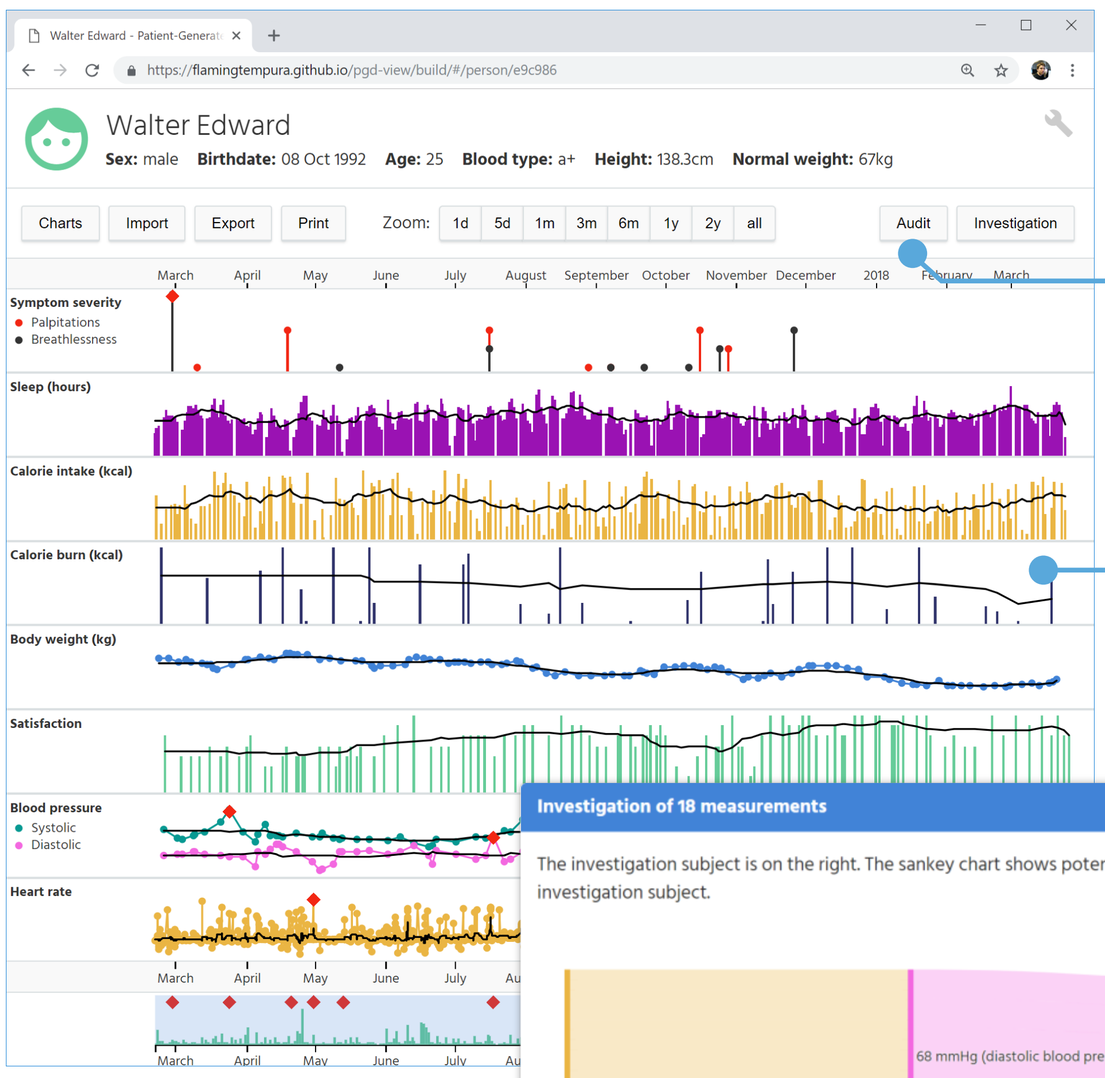
Patient-Generated Health Data (PGHD)

The popularity of mobile apps and consumer devices for tracking personal information has created **detailed data sources** about health and wellbeing. These benefits have led calls to investigate using consumer technology within healthcare to support clinical decision making, in turn leading to **improved patient outcomes and reduced healthcare costs**.

Participatory design

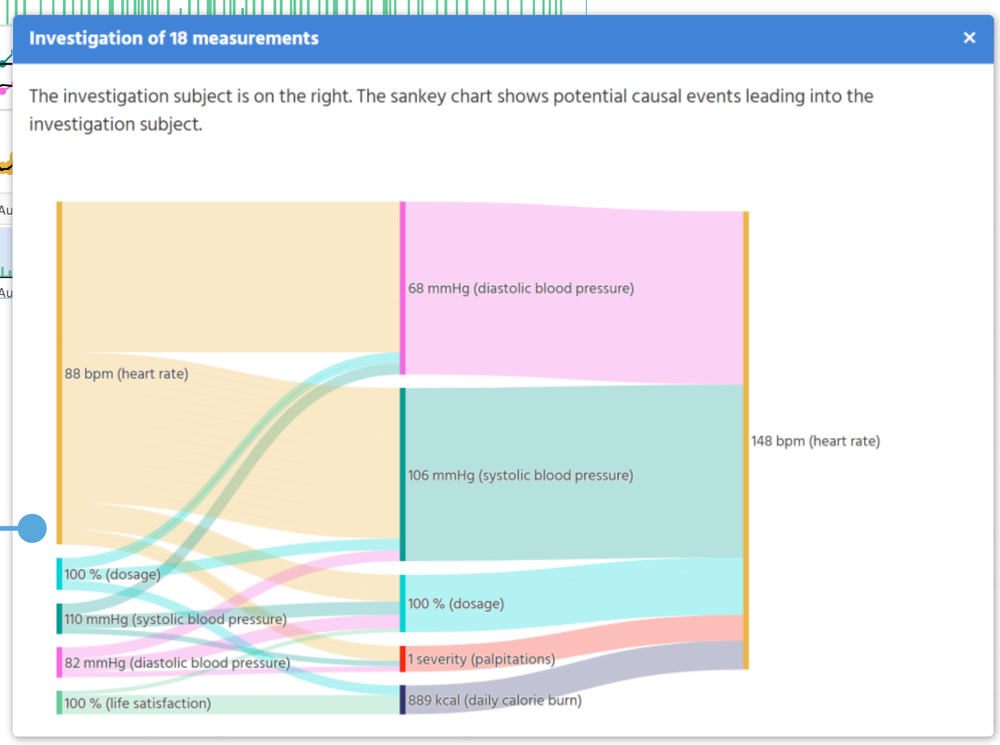
13 clinicians across several clinical roles, including cardiology, general practice, nursing, and oncology were interviewed about their use and perceptions of PGHD in their practice. Then, **5 cardiologists** participated in the co-design of a tool for using self-tracked data in their practice.

The tool is accessible on GitHub at: https://flamingtempura.github.io/pgd-view



An 'audit' can be used to identify the provenance of the data.

All relevant data shown in a single timeline to help identify patterns.



'Investigations' can be used to identify the causal relationship between events.

How do we track health?

Jawbone sleep, steps taken, mood, diet

Apple Watch heart rate, steps, calories, excersise, standing

Conclusions and Future

Self-tracked data may be useful for clinicians as **additional evidence** when making clinical decisions. Difficulties exist in ensuring that this data is of sufficient quality and represented in a standard way.

The next stage of this research will be to identify techniques for using self-tracked data effectively in clinical settings. This will aim to observe how these data are used by both clinicians and patients. This will help identify how self-tracked data could be used in a future data-driven and preventative healthcare.

Filling gaps between consultations

*"Patients say, 'I may get one episode a week,' which doesn't give you a proper timeframe. I don't think when people think back on it they get an accurate reflection of what it is. So **having it diarised** on a daily basis is a **better and accurate way of evaluating that timeframe**."*

- Participant 1 (Oncologist)

Treatment planning

*"It comes down to symptoms, and therefore symptoms is your only target for treatment. So **that data is the only parameter that's going to let me decide whether to use treatment or not**. And if you have treated them, whether it's worked."*

- Participant 2 (Cardiologist)

Doctor-patient collaboration

*"It allows you to sit down with the patient and say, 'if we look at your symptoms, you rank low compared to others. Your potential gain from this procedure is less than for others. But if you accept that, and understand the risks, then that's fine.' It gives you a stronger way of **counselling the patient**."*

- Participant 3 (Cardiologist)

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