



AKADEMIA
LEONA KOŹMIŃSKIEGO

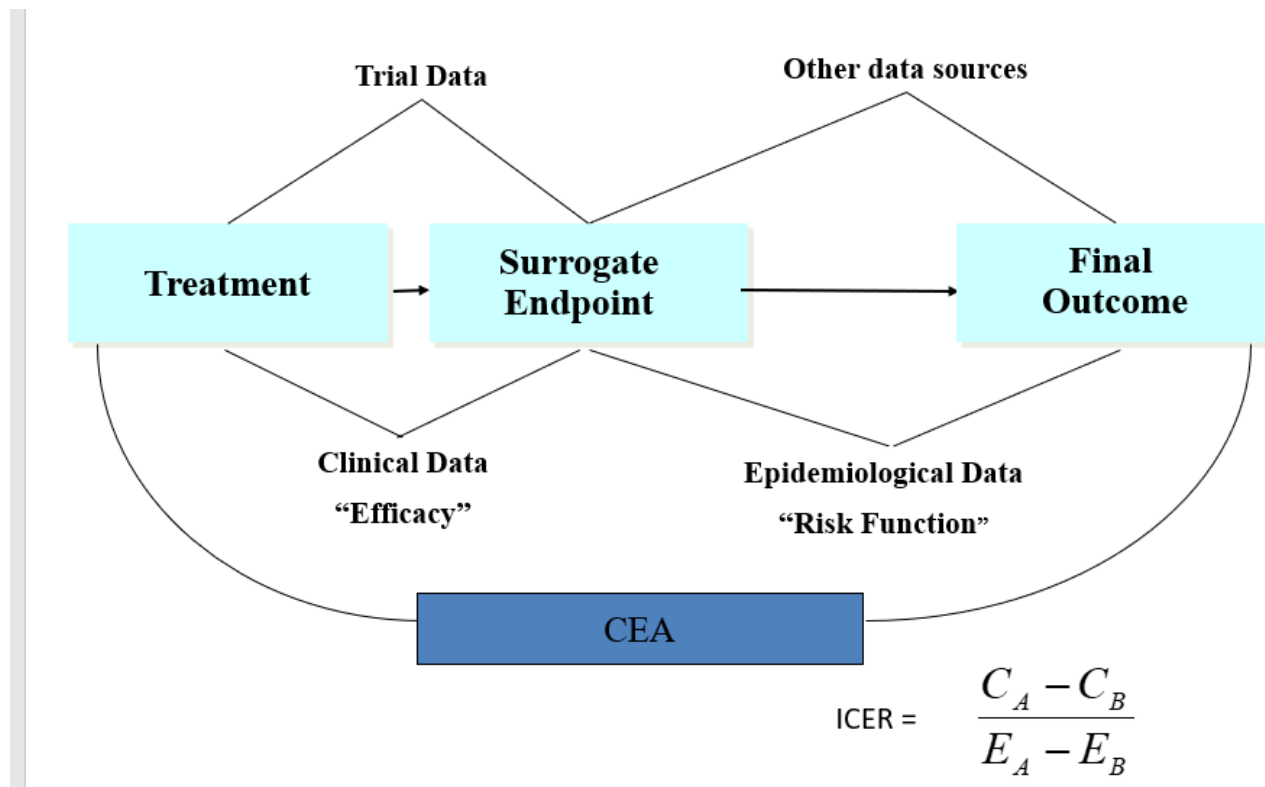
Do ICERS support the digital revolution? *What is beyond QALY?*

Katarzyna Kolasa, PhD

Head of Health Economics and Healthcare Management
Division, Professor Kozminski University, Warsaw, Poland

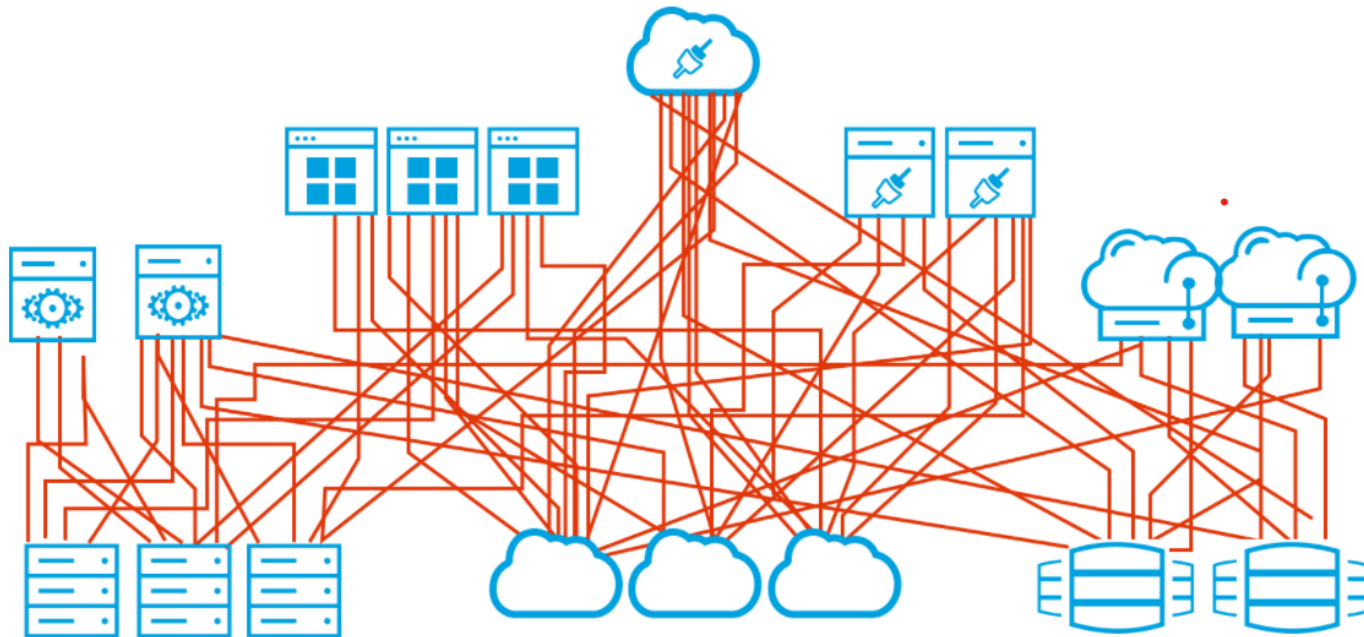
The cost effectiveness framework

TODAY *QALY* approach

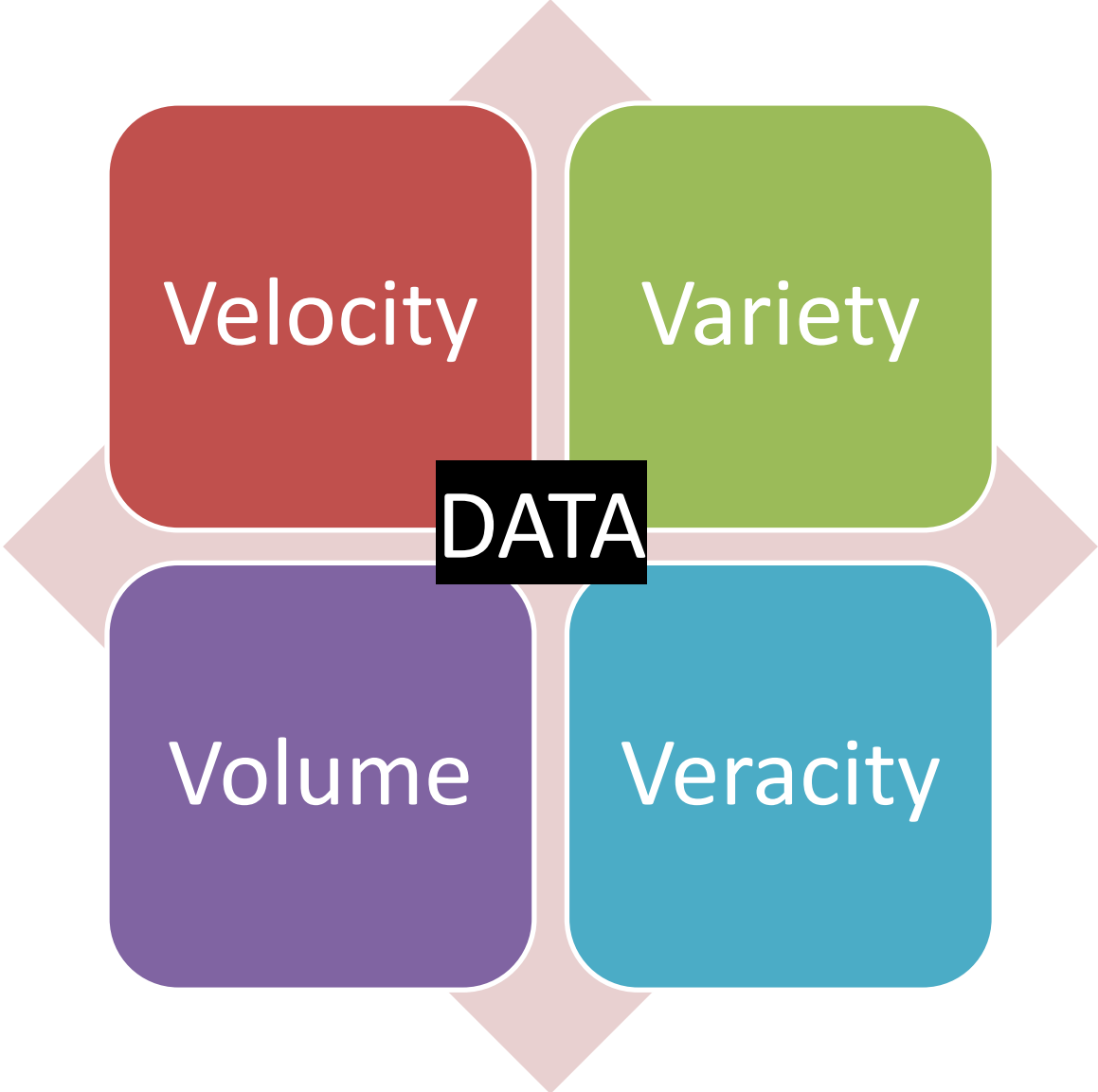


The cost effectiveness framework

TOMORROW *beyond QALY approach*



Data drives beyond QALY approach



Byte marks

The digital universe
Zettabytes

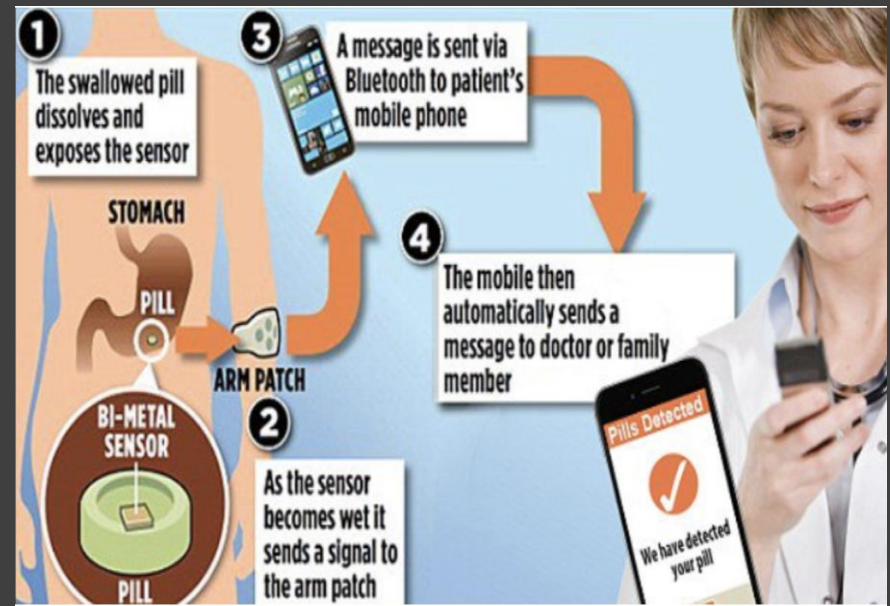


Sources: IDC; Bloomberg

Companies mentioning
AI in earnings calls



Abilify Mycite



Digital Revolution

Data collected from patients, about patients' behavior, patients' satisfaction IS to inform the decision making processes

NUMBER OF PATENT APPLICATIONS EU (EPO, 2020)

1. Medical technology



14 295
+2.6%

2. Digital communication



14 122
+1.0%

3. Computer technology



13 097
+1.9%

4. Electr. machinery, apparatus, energy



11 346
+0.4%

5. Transport



9 020
-5.5%

6. Pharmaceuticals



8 589
+10.2%

7. Measurement



8 582
-5.2%

8. Biotechnology



7 246
+6.3%

9. Other special machines



6 261
-2.5%

10. Organic fine chemistry



5 905
-1.5%

Source: EPO.
Status: 1.2.2021.



Gravitate Health

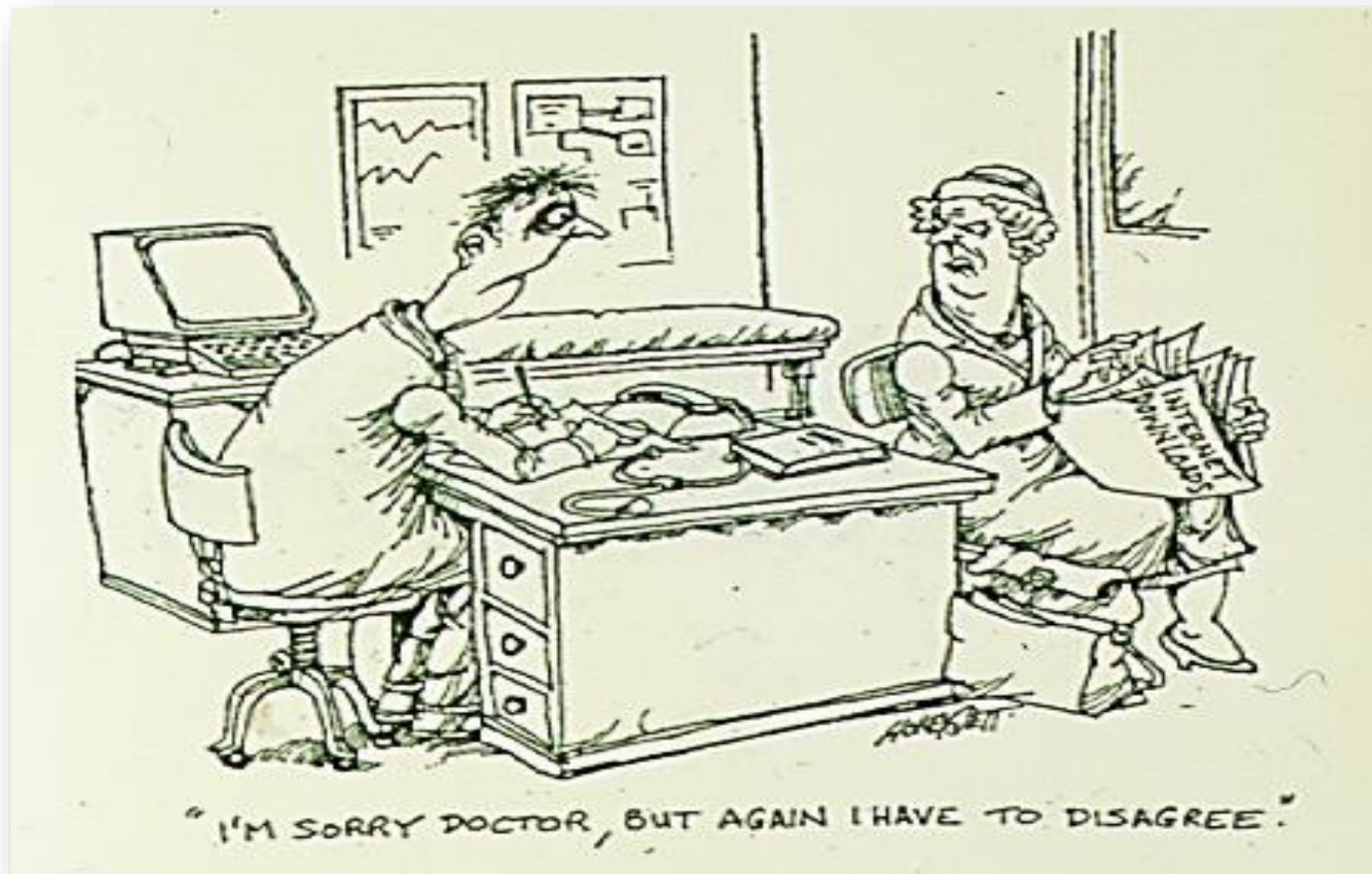
A DIGITAL HEALTH INFORMATION JOURNEY

“Empowering and equipping Europeans with health information for active personal health management and adherence to treatment”

Future is about
digital outcomes

- *“Our mission is to equip and empower patients with digital health information and tools that make them confident, active, and responsive in their patient journey, specifically encouraging safe use of medicines for better health outcomes and quality of life” – GRAVITATE website*

Patient centric healthcare



Usefulness - product enables user to achieve their goals - the tasks that it was designed to carry out and/or wants needs of user.

Effectiveness (ease of use) - quantitatively measured by speed of performance or error rate and is tied to a percentage of users.

Learnability - user's ability to operate the system to some defined level of competence after some predetermined period of training. Also, refers to ability for infrequent users to relearn the system.

Attitude (likeability) - user's perceptions, feelings and opinions of the product, usually captured through both written and oral communication.

<https://www.jstor.org/stable/43087923?seq=1>

Patient centric healthcare

In contrast to clinical outcomes, digital health outcomes rely more on patients' preferences (for example usability of mobile technology)

Does QALY
captures the
value of health
improvement?

Aristotle wrote 2,300 years ago:

“Happiness is the meaning and the purpose
of life, the whole aim and end of human
existence.”



How environment can impact well being and improve health beyond QALY?

Horizon 2020 Research Heart Project EU



All information will be processed in the data management tool that is using advanced Machine Learning (ML) and Artificial Intelligence (AI) techniques to verify whether Blue-Green Solutions improve public health and wellbeing (800 participants in each case study)



Beyond QALY approach

The Danish Twin Study established that only about 20% of life expectancy is dictated by our genes, whereas the other 80% is dictated by our lifestyle.

In ancient times, the average length of life was about 35 years while it was 72.3 in 2020 on average globally.

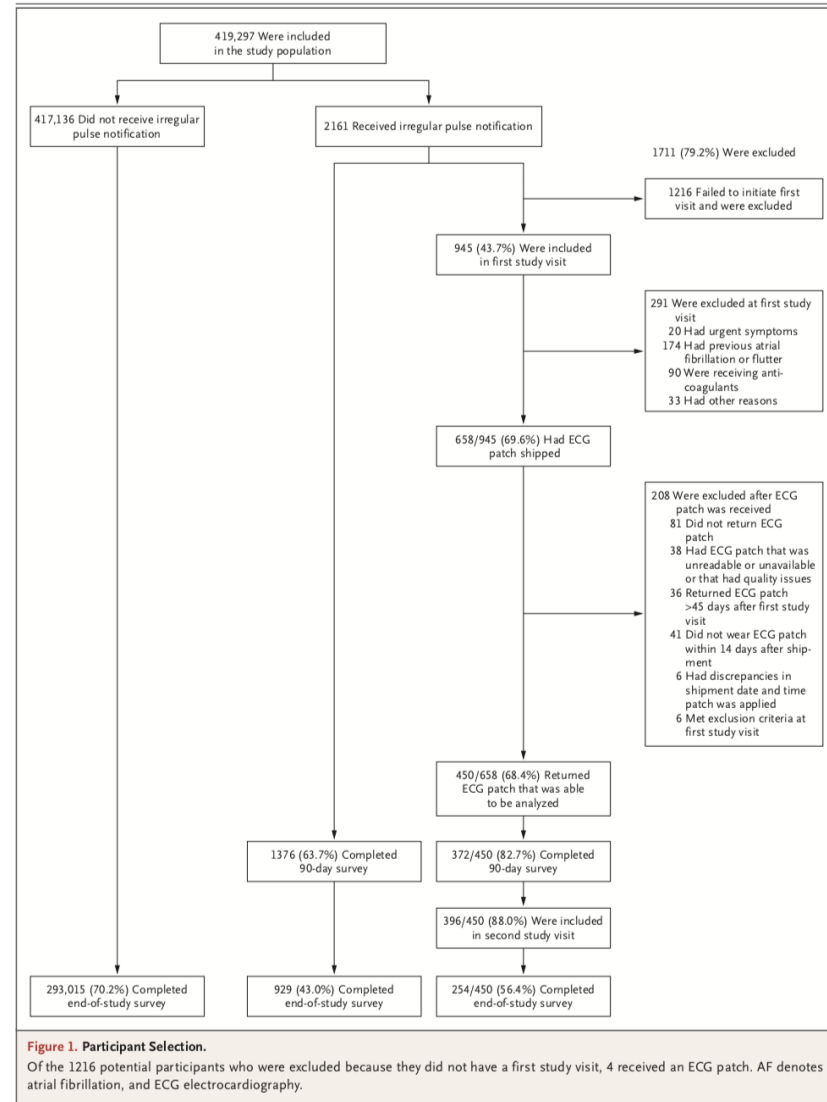
In ancient Greece, some individuals managed to experience life expectancy similar to our times with mean (\pm SD) and median length of life was 71.3 ± 13.4 and 70 years, respectively



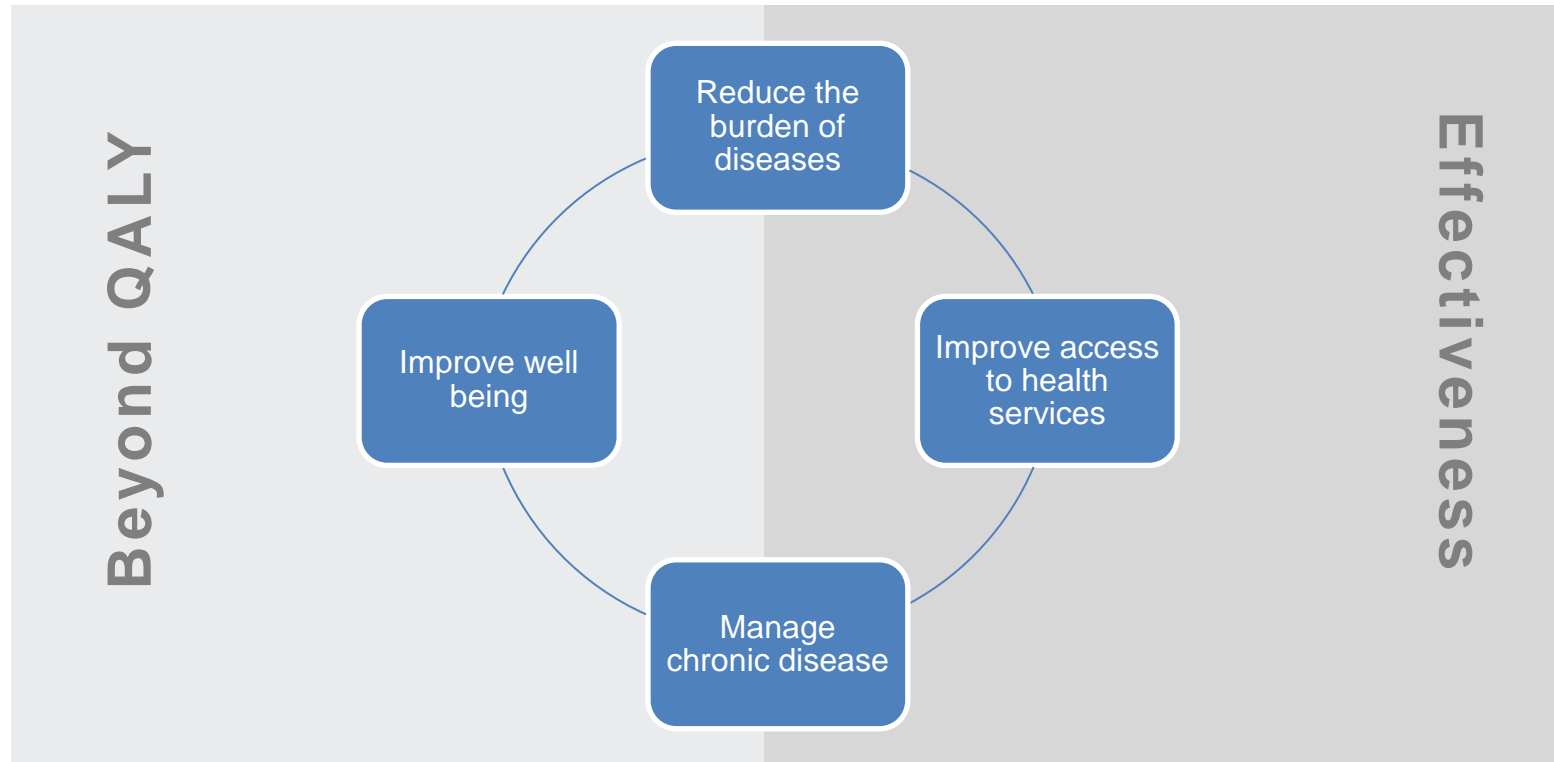
Smartwatch to Identify Atrial Fibrillation

- Among participants who received a notification of an irregular pulse only **20.8%** returned an ECG patch (450/2161).
- The overall yield of atrial fibrillation on an ECG patch was **34%** 153/450 and in **84%** cases subsequent notifications were confirmed to be atrial fibrillation.
- The index atrial fibrillation episode may have ended by the time the ECG patch was worn, which was, on average, **13 days** after the initial notification and were worn for an average of **6.3 days**.

Efficiency gains



Need for standardisation of beyond QALY approach in the digital era





Thank you for your
attention