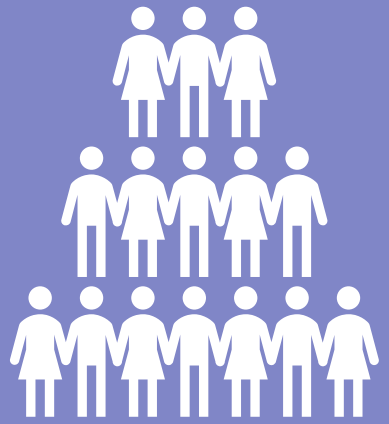
EpiSave

Transforming Health with Smart Seizure Prediction



65 million persons with epilepsy worldwide

1/3 non-respondent to currently available treatments

1/3 with Generalized Tonic-Clonic Seizures (GTCS)

Drug-resistant epilepsy affects approximately **1/5** of people with epilepsy

GTCS ARE THE MOST SEVERE FORM OF EPILEPTIC SEIZURES

Trauma

Coma

Risk of Sudden Unexpected Death in Epilepsy (SUDEP)

Intervention from caregiver is necessary

SUDDEN UNEXPECTED DEATH IN EPILEPSY

- About 65,000 per year worldwide
- ¼ of all are under 50 years old

- Primarily triggered by GTCS, often at night during sleep
- Prevention by timely resuscitation
  - Reliable GTCS detection application

GTCS detection and notification of caregiver

Quantify seizure

Android off-the-shelf smartwatches

AI-based algorithm using 3D-accelerometry sensor data

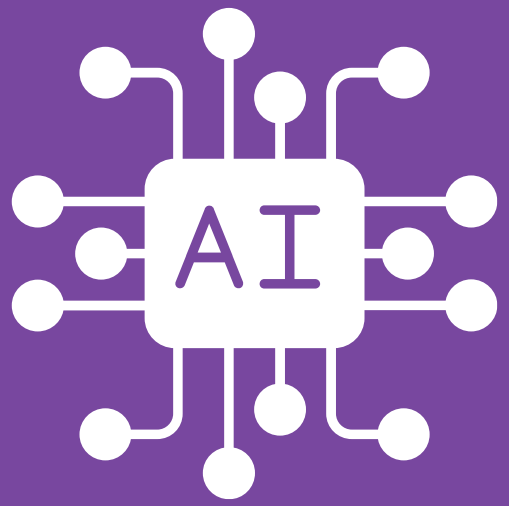
TECHNOLOGY

Advantages of 3D accelerometry sensors:

- Most reliable data
- Lowly affected by movement artifacts
- Available in all smartwatches
- Very low energy consumption

View to expand to heart rate and SpO2

CNN AI BASED ALGORITHM

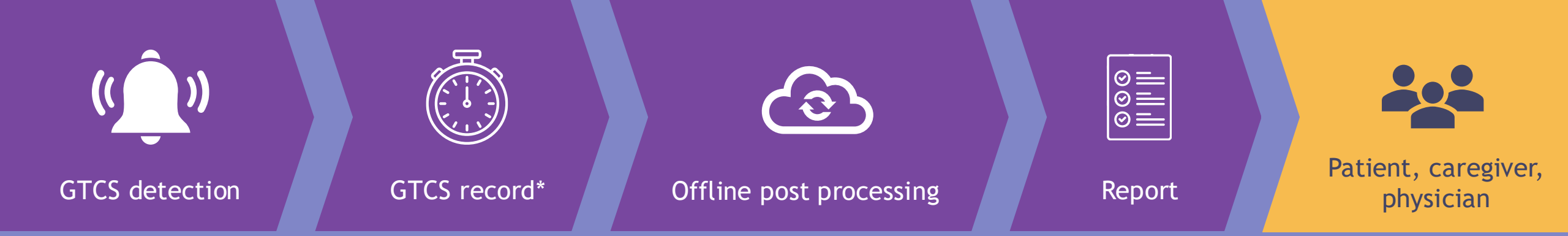


Developed based on the largest proprietary cohort of adult persons with epilepsy

Concomitant recording of in-hospital video-EEG of seizures and wristwatch

400 patients with 100 GTCS from Austria, Denmark, France, Switzerland, Germany

Validated soon on US cohort



Information provided in report:

1. Duration of the GTCS
2. Presence and duration of its tonic phase
3. Duration of its clonic phase
4. Presence of a linear decrease of the clonic movements
5. Type of GTCS (1, 2, 3) based on a combination of items 2 and 4
6. Duration of the post-ictal immobility (Still under investigation)
7. Assessment of the presence of prolonged PGES based on all above (Still under investigation)

* Prone position could be detected with a gyroscope to prevent suffocation (TBC)

MAIN AIMS

Expand seizure detection to the largest number of persons with epilepsy by providing the most affordable solution

1. Offer 1st in class technology to automatically quantify severity of epileptic seizures

2. Improve prevention of Sudden Unexpected Death in Epilepsy

ADDED VALUE

Cheaper than other available solutions

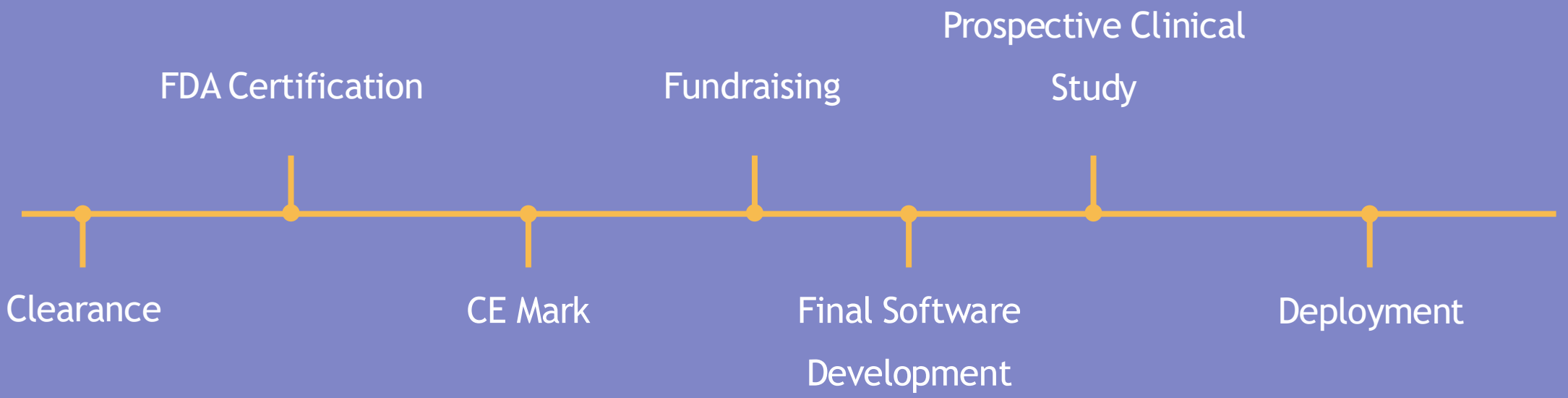
Information not provided by competitors: severity of GTCS, body position at end of GTCS

Potential for breakthrough progress for identifying SUDEP risk

SHORT AND LONG-TERM STRATEGY FOR SUDEP PREVENTION

- Increase the number of persons with epilepsy using GTCS detection device to enable timely and effective resuscitation
- Provide physicians with quantified information on the severity of GTCS to optimize antiseizure medication (known to reduce the risk of SUDEP)
- Validate novel GTCS-based biomarkers, highly predictive of the risk of SUDEP to enable the emergence of new SUDEP preventive therapies

ROADMAP



SUPPORTING FRAMEWORK

- Largest high-quality dataset
- International credentials in seizure detection
- International credentials in the field of SUDEP
- Large international network of epilepsy stakeholders

COLLABORATORS AND PARTNERS

CHUV, Lausanne, Switzerland

Charles Bardyn
Viktoria Bastic
Adriano Bernini
Isabelle Beuchat
Pauline Ducouret
Errikos Maslias
Georges Melissargos
Alexandre Pfister
Jan Novy
Andrea Rossetti
Philippe Ryvlin
Birgit Schaffhauser
Antoine Spahr
Maylis Touya
Solange Zoergiebel

EPFL, Lausanne, Switzerland

David Atienza
Jonathan Dan
Christodoulos Kechris

Zurich, Switzerland

Lukas Imbach
Georgia Ramantani

Geneva, Switzerland

Margitta Seeck
Serge Vulliémoz
Laurent Spinelli

Lyon, France

Sylvain Rheims

Dianalund, Denmark

Sandor Benizcky

Copenhagen, Denmark

Martin Fabricius

Kork, Germany

Vienna, Austria

Christophe Baumgartner

Houston, USA

Samden Lhatoo