

# Medical Engineering & eHealth

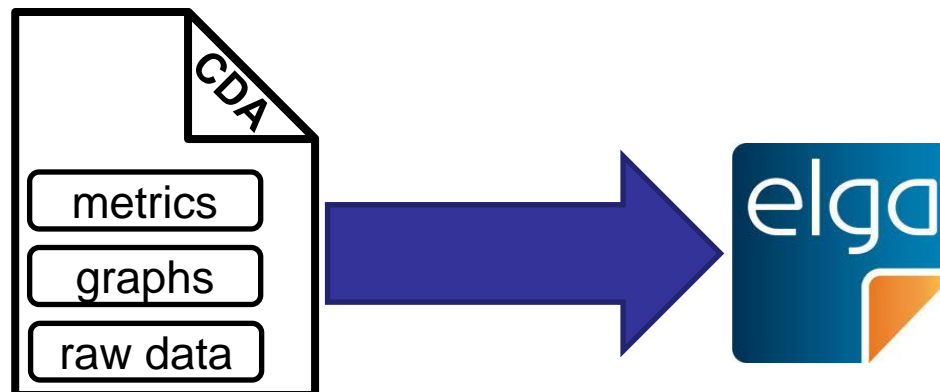


Christoph Oswald, MSc  
[chrioswald@gmail.com](mailto:chrioswald@gmail.com)

## Integration of Continuous Glucose Monitoring Data into an Electronic Health Record using HL7 Clinical Document Architecture

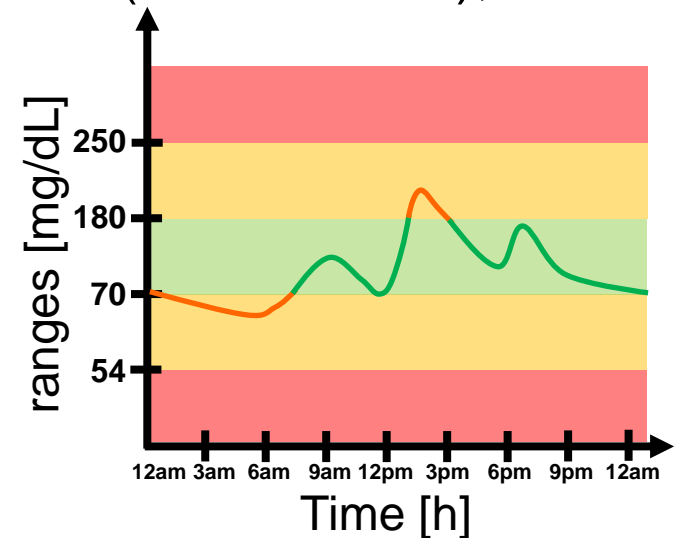
# Objective

- Identify key Continuous Glucose Monitoring (CGM) metrics
- Integrate them in the standardised document format Health Level 7 (HL7) Clinical Document Architecture (CDA)
- Implement a document transfer to the Elektronische Gesundheitsakte (ELGA)



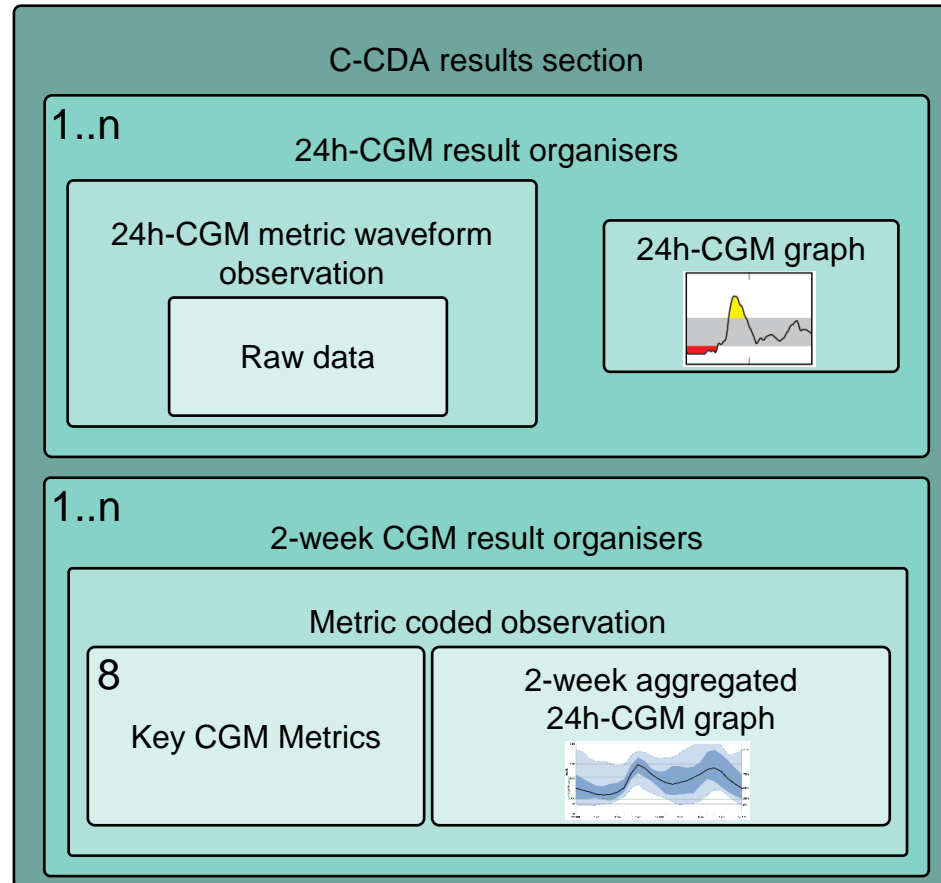
# Results

- Identified 8 key CGM metrics and one graphical report according to an international consensus (Danne et al.),
  - 5 Time in Range
  - Glucose Management Indicator
  - Average Glucose
  - Glucose Variability
  - Ambulatory Glucose Profile
- HL7 CDA result section
  - Using SNOMED-CT
- Python-based Broker for transmission



T. Danne, R. Nimri, T. Battelino, et al., “International consensus on use of continuous glucose monitoring”, *Diabetes Care*, 2017; 40(12):1631–1640.doi: 10.2337/dc17-1600

# Resulting HL7 CDA



International Diabetes Center, „AGP – Ambulatory Glucose Profile“. [Online]. Available: <http://www.agpreport.org/> (visited on 05/22/2020).

# Possible next steps

- CGM result structure might be added to the “ELGA Telemonitoring Episodenbericht” (HL7 CDA)
  - This report will be first time used in the telehealth pathway HerzMobil Tyrol and Styria
  
- Alignment of CGM content with sensor manufacturers, medical expert groups and HL7 Austria
  - Technical discussion with expert group
  - Ballot procedure with HL7 Austria

