

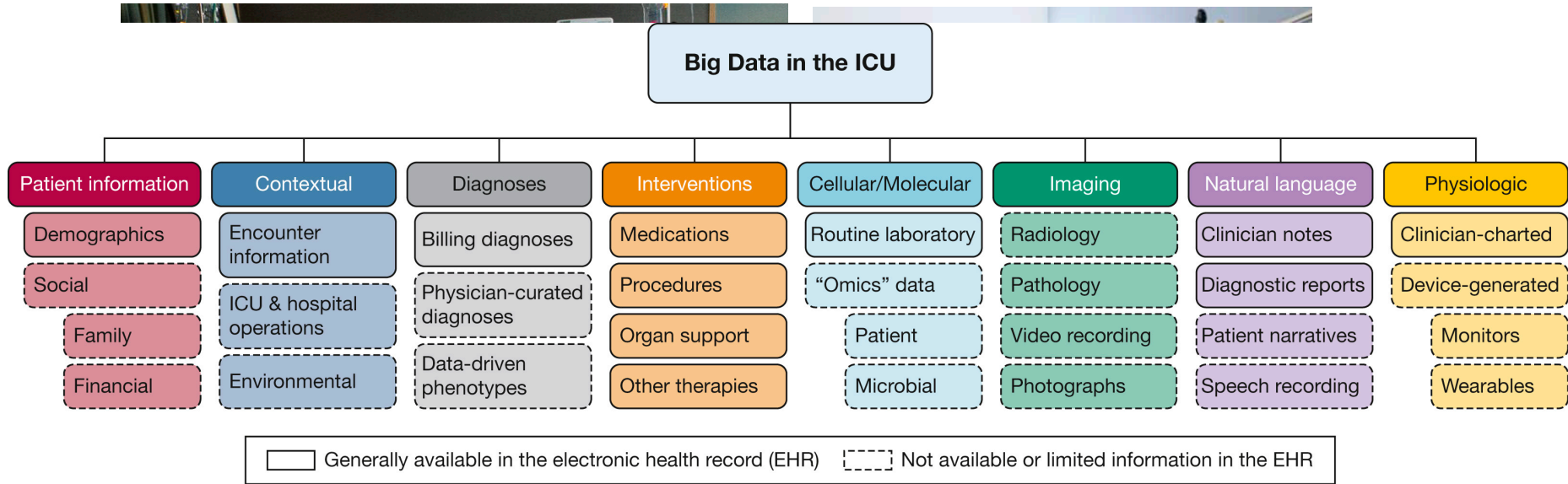
PREcision Care in Cardiac arrest – ICECAP (PRECICECAP)

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Critically Ill Patients Generate LOTS of Data



Current Treatments Lack Precision

- ICECAP aims to find optimal cooling duration for all patients
- Most cardiac arrest trials of effective interventions are neutral
- Little effort to target interventions to likely responders
- Specific to cardiac arrest
 - Patient and arrest characteristics
 - Cardiopulmonary physiology (static and over time)
 - Neurophysiology (EEG, evoked potentials)
 - Imaging
 - Response to treatment (static and over time)

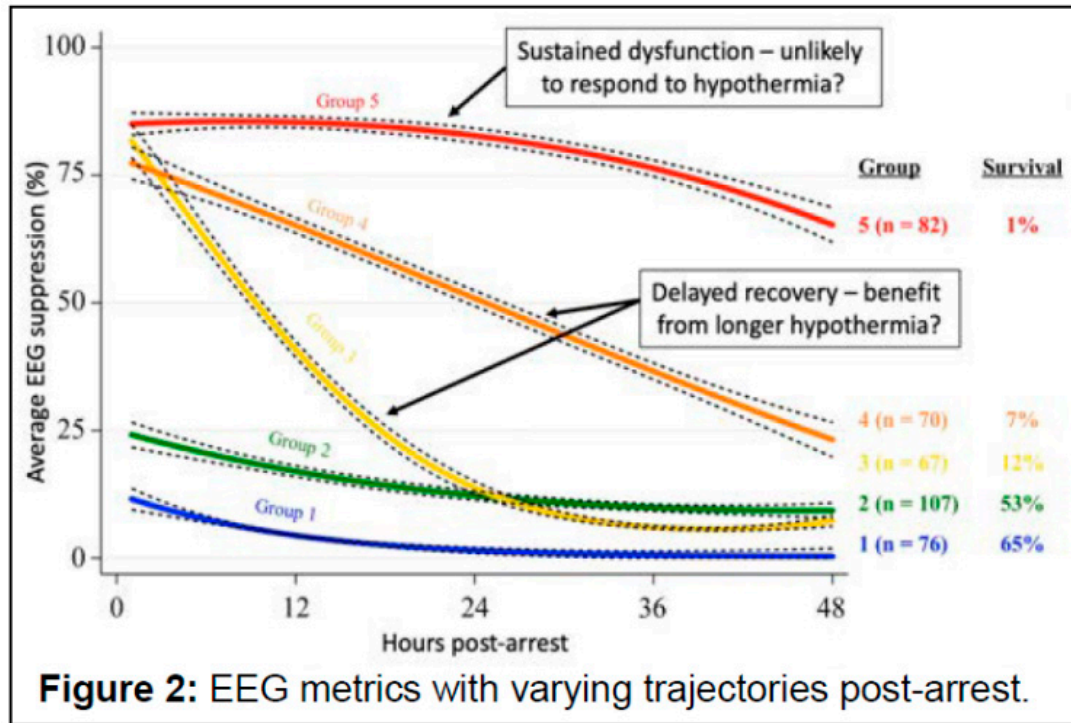


PRECICECAP and Supplement Aims

- Aim 1: Identify signatures that predict optimal duration of hypothermia for subgroups of cardiac arrest survivors using multimodality high-resolution data
- Aim 2: Use these signatures to predict long-term function
- Aim 1: Develop a modular data dashboard to support AI/ML in neurocritical care.
- Aim 2: Develop modules for harmonization and annotation of ICU waveform data
- Aim 3: Develop an ecosystem to create and share data pipelines from modules



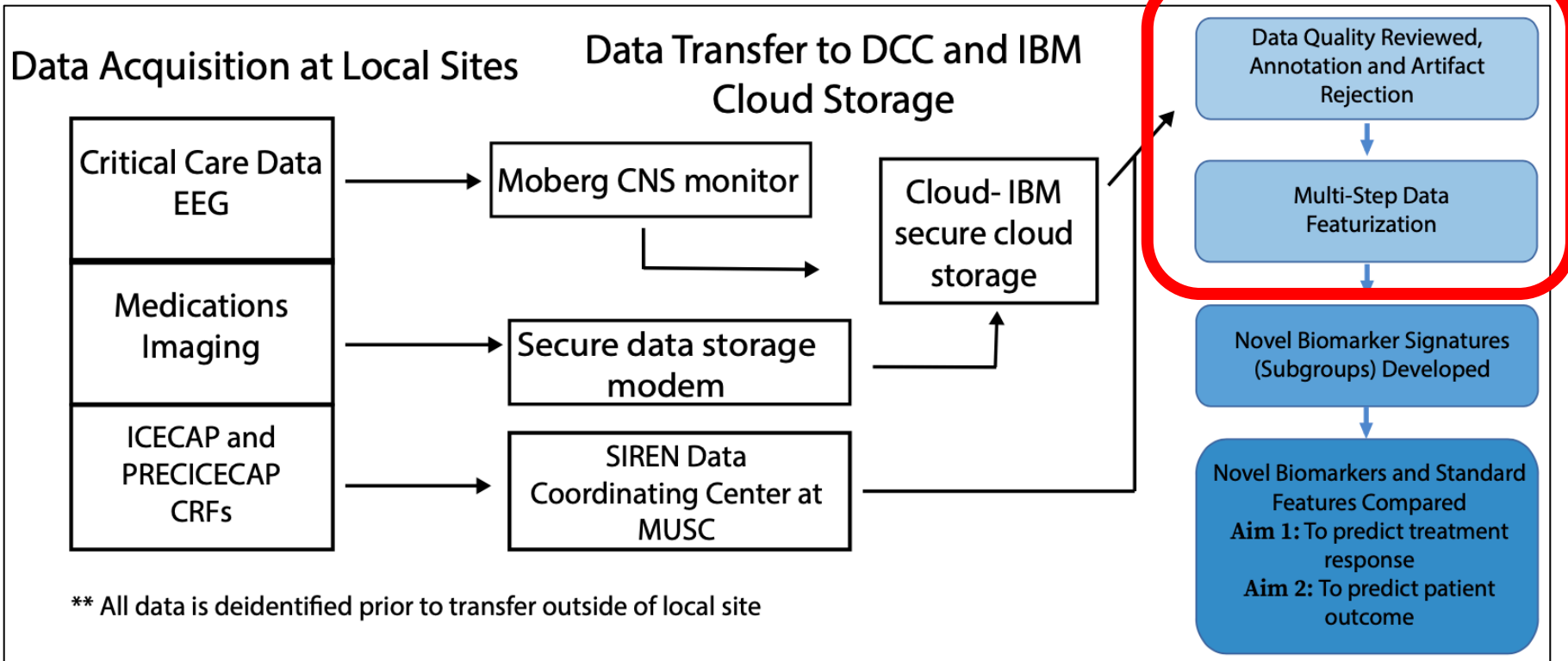
Stratified treatments

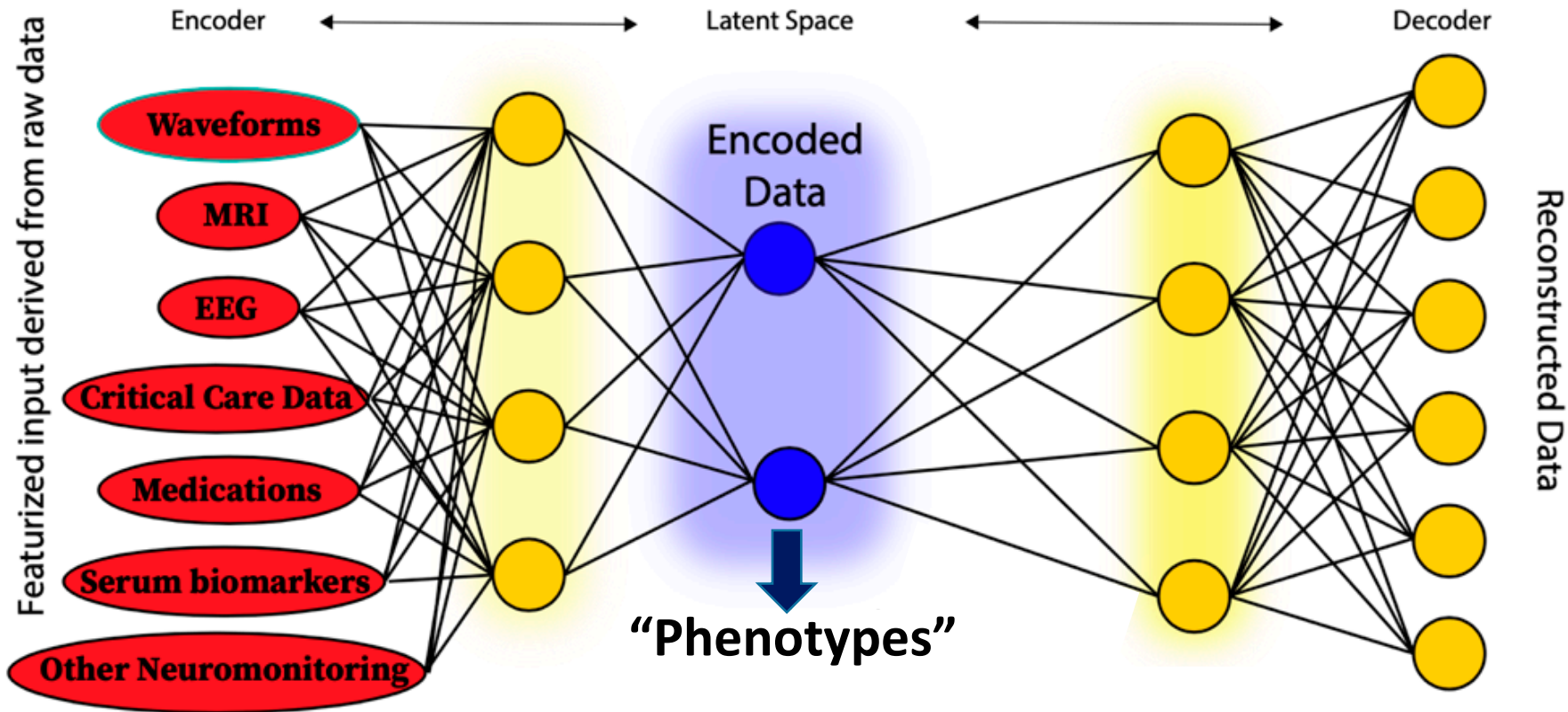


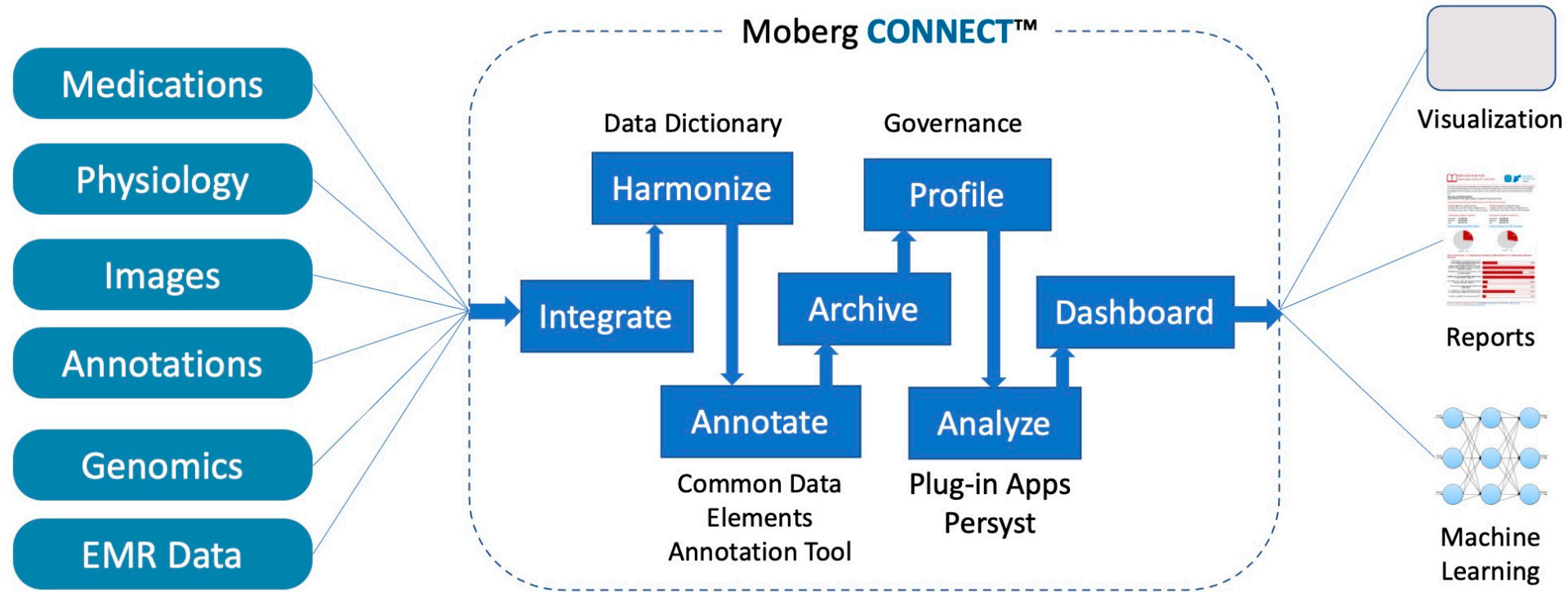
Available Data

- EEG waveforms
- Cardiopulmonary waveforms (BP, pulse oximetry, ECG)
- Neuro/cardiac imaging
- Pupillometry
- Physical exam
- Medications
- Imaging
- Invasive neuromonitoring
- Noninvasive neuromonitoring

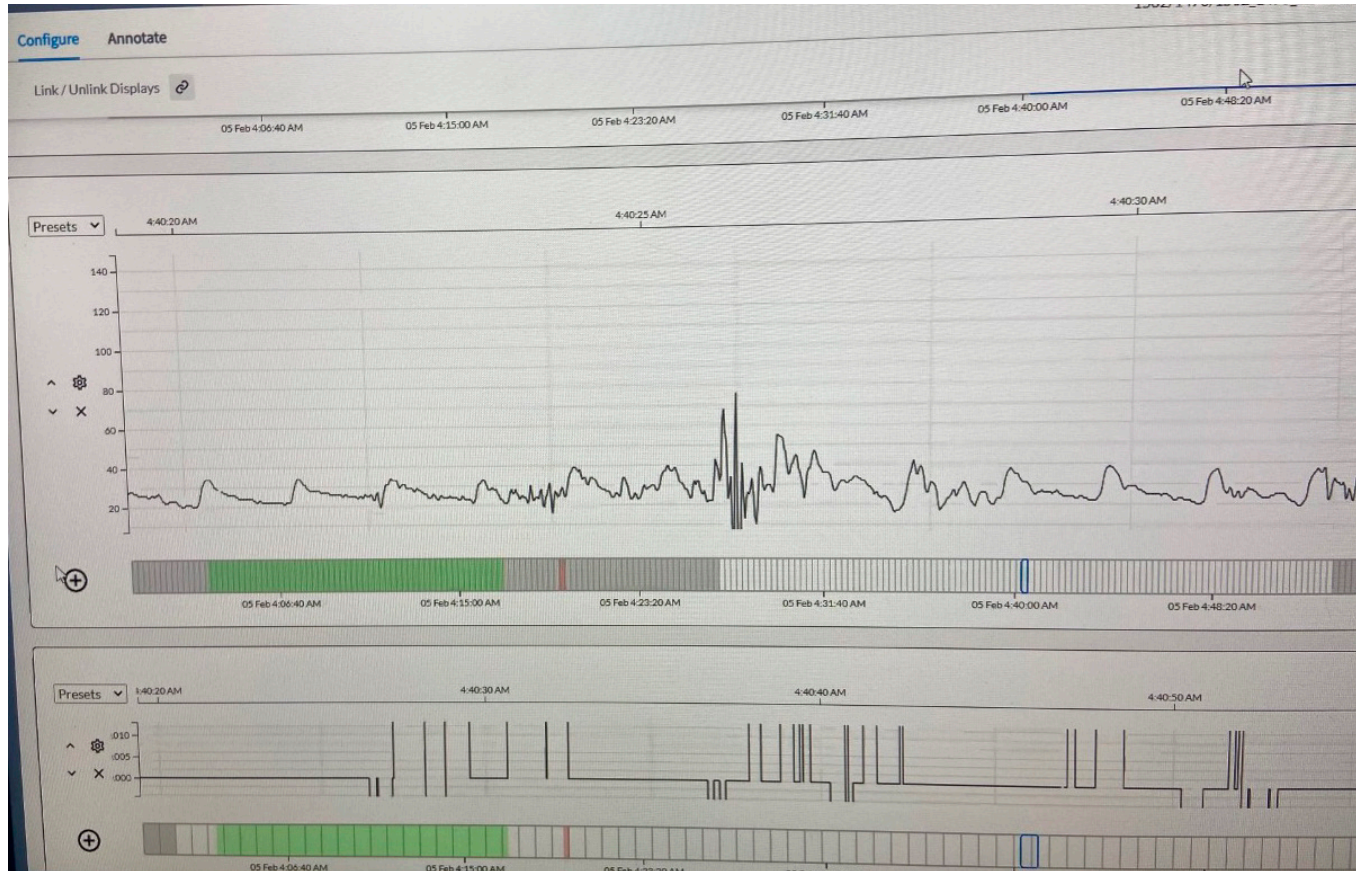








Sample Data Display



Summary of Pipeline Development Progress

- Developed graphical user interface for data visualization
 - Aim 1
- Developed process for file upload and conversion to HDF5 format
 - Allows for harmonization (Aim 2)
- Developed process for annotation across data types, resolution, and sampling frequency
 - Allows for annotation (Aim 2)
- Ongoing work on connecting modules into pipelines



Thank you!

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PREcision Care In Cardiac ArrEst

