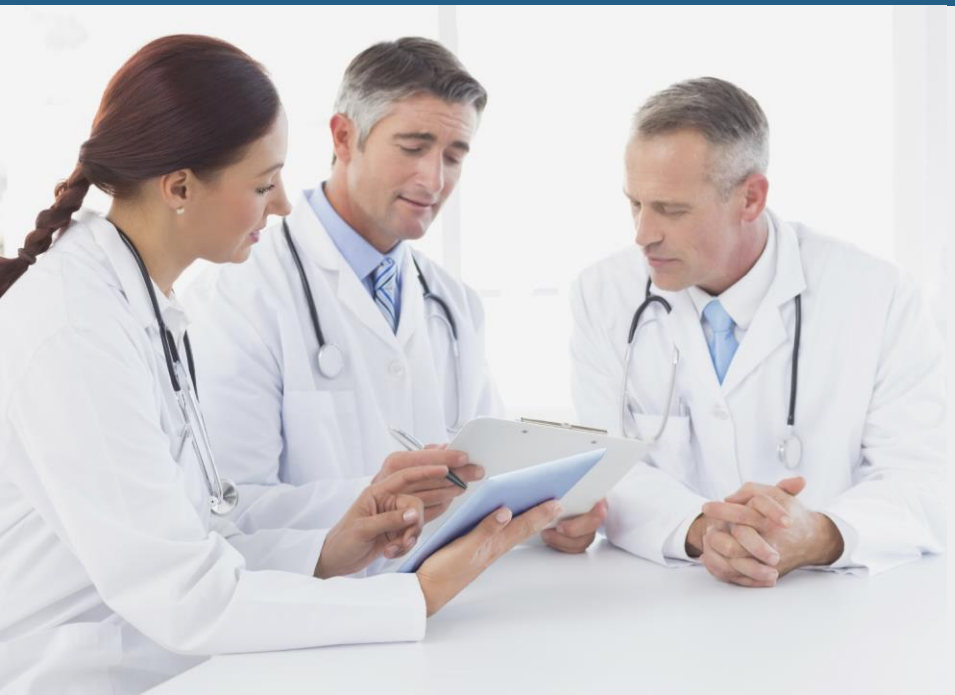
A Personalised Integrated Care Approach for Service Organisations and Care Models for Patients with Multi-Morbidity and Chronic Conditions



PICASO Architecture

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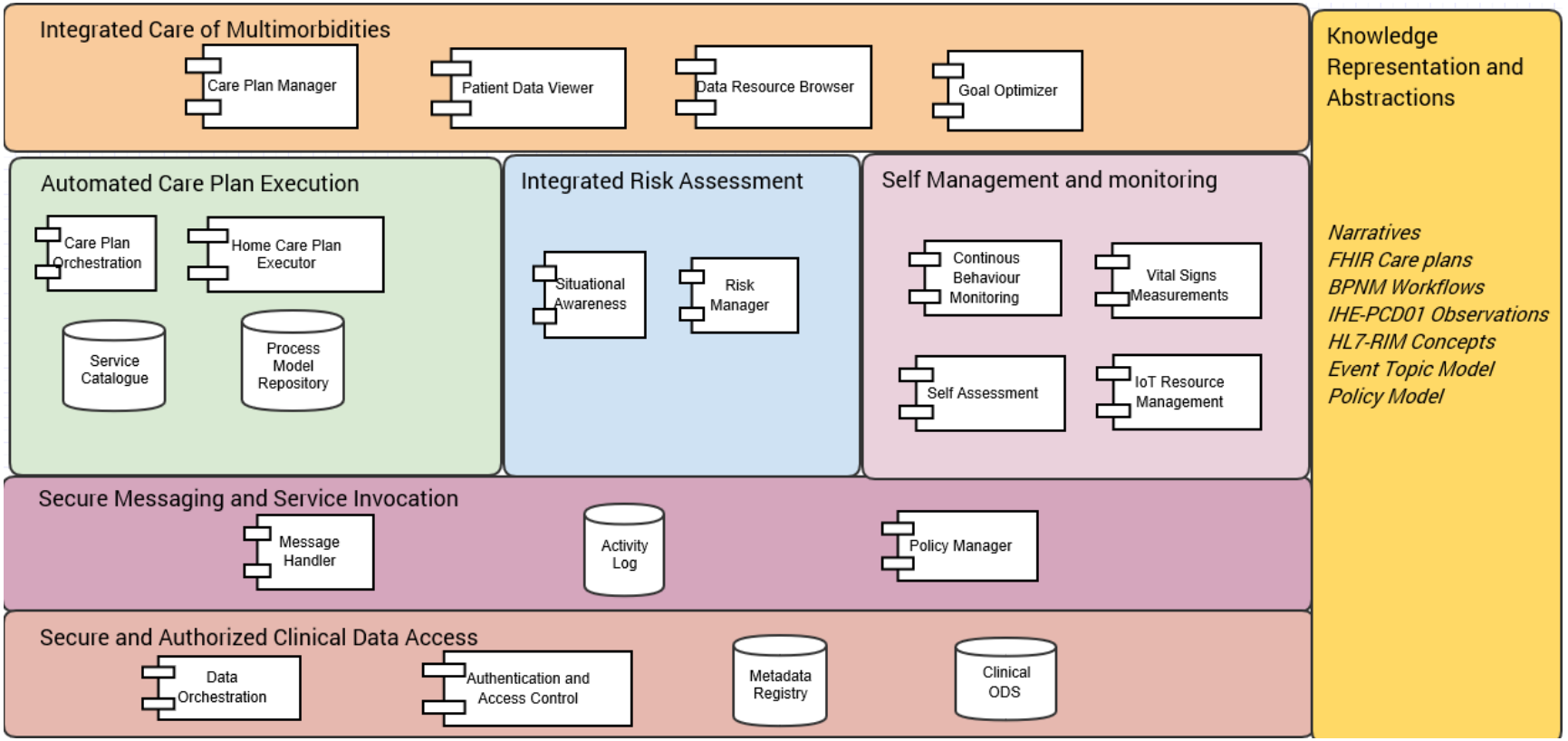
PICASO

PICASO objectives

- Improve health outcomes, daily activities, and quality of life of older persons with multi-morbidities
- Reinforce medical knowledge and create new care models for management and treatment of patients with multi-morbidity conditions;
- Allow for more cost-effective care management through automated and efficient workflows
- Improve cooperation and exchange of knowledge between professional caregivers
- Support patient empowerment and self-care

PICASO Conceptual Architecture



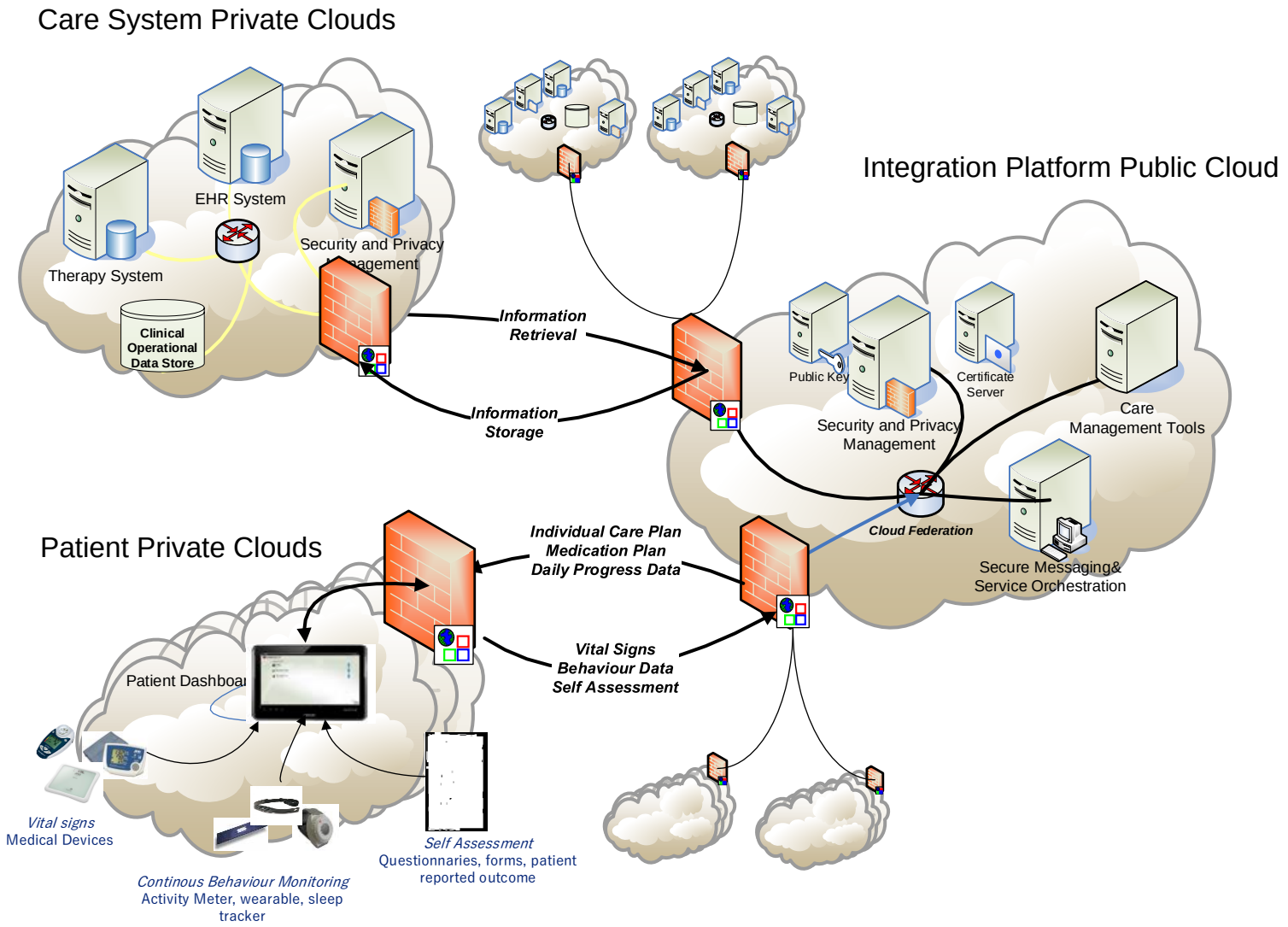
Picaso Challenges

- Multi-morbidity care requires access to clinical data stored in several care organisations
- Care organisations needs to reduce IT costs and benefit from cloud solutions
  - Scalability
  - Resource sharing
  - Install, configure, update, maintain software in one place
- Clinical data cannot be stored outside the care organisation
- Avoid installing complete Picaso platform at each hospital
  - Huge installation and maintenance effort

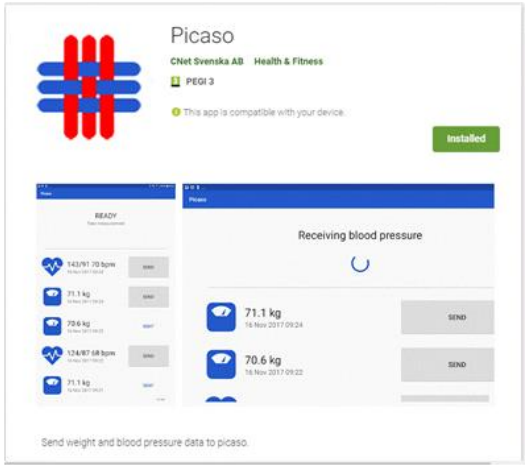
Picaso Approach: Care Management as a Service

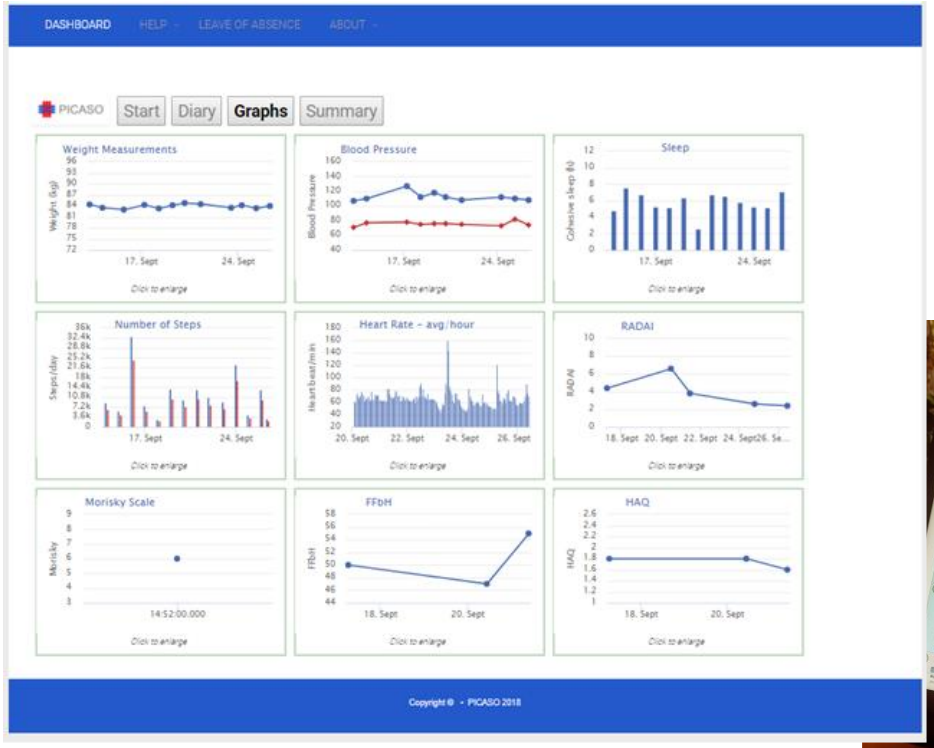
- Federated Cloud Architecture
  - Public, Care and Patient Clouds
  - Separate software and clinical data. ”Software-to-data” cloud
    - Clinical data always remains in hospital.
    - No persistence of data in public cloud
  - All data is encrypted and pseudonymised when transferred in public cloud
- Security and authorisation at component level
  - Is the requester (user/clinician) authorised to make the request?
  - Is it valid to enter this data into the clinical environment?

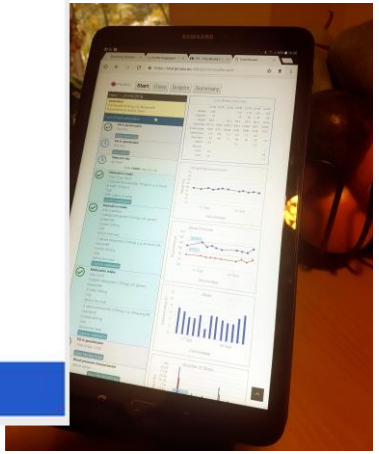
PICASO Federated Cloud Solution



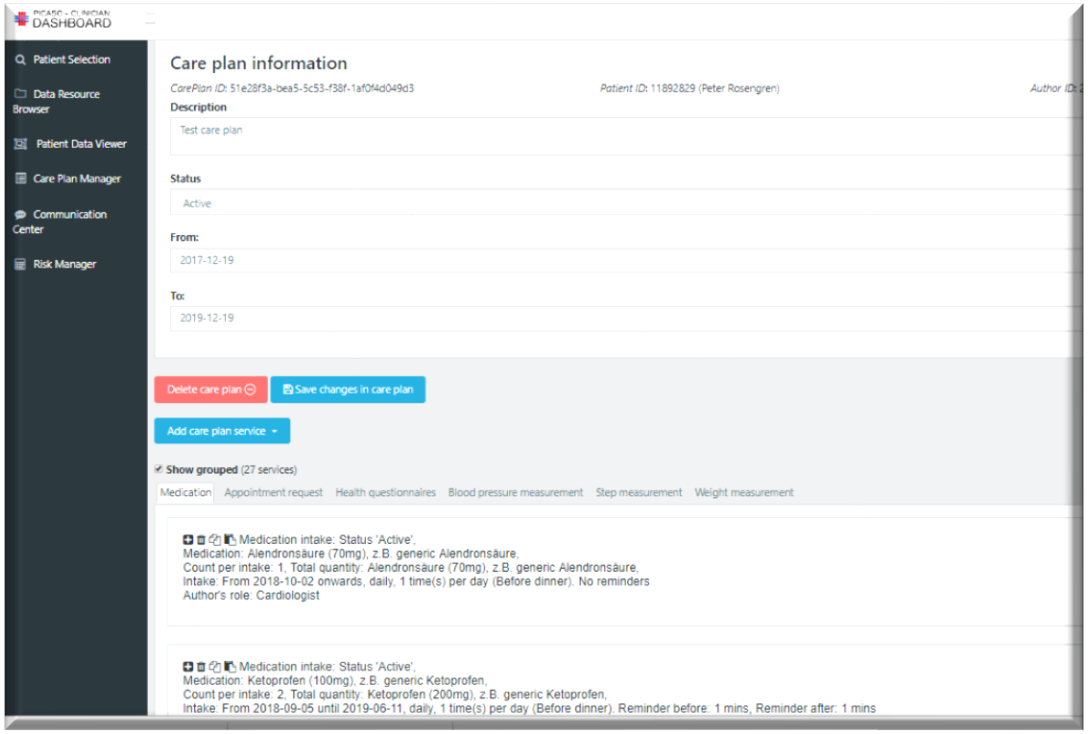
Patient Self-Monitoring Framework

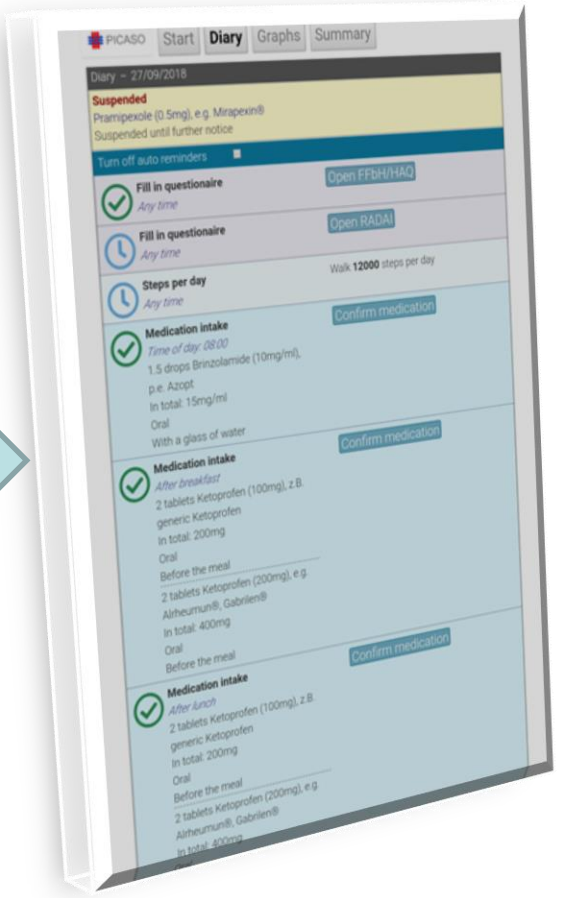




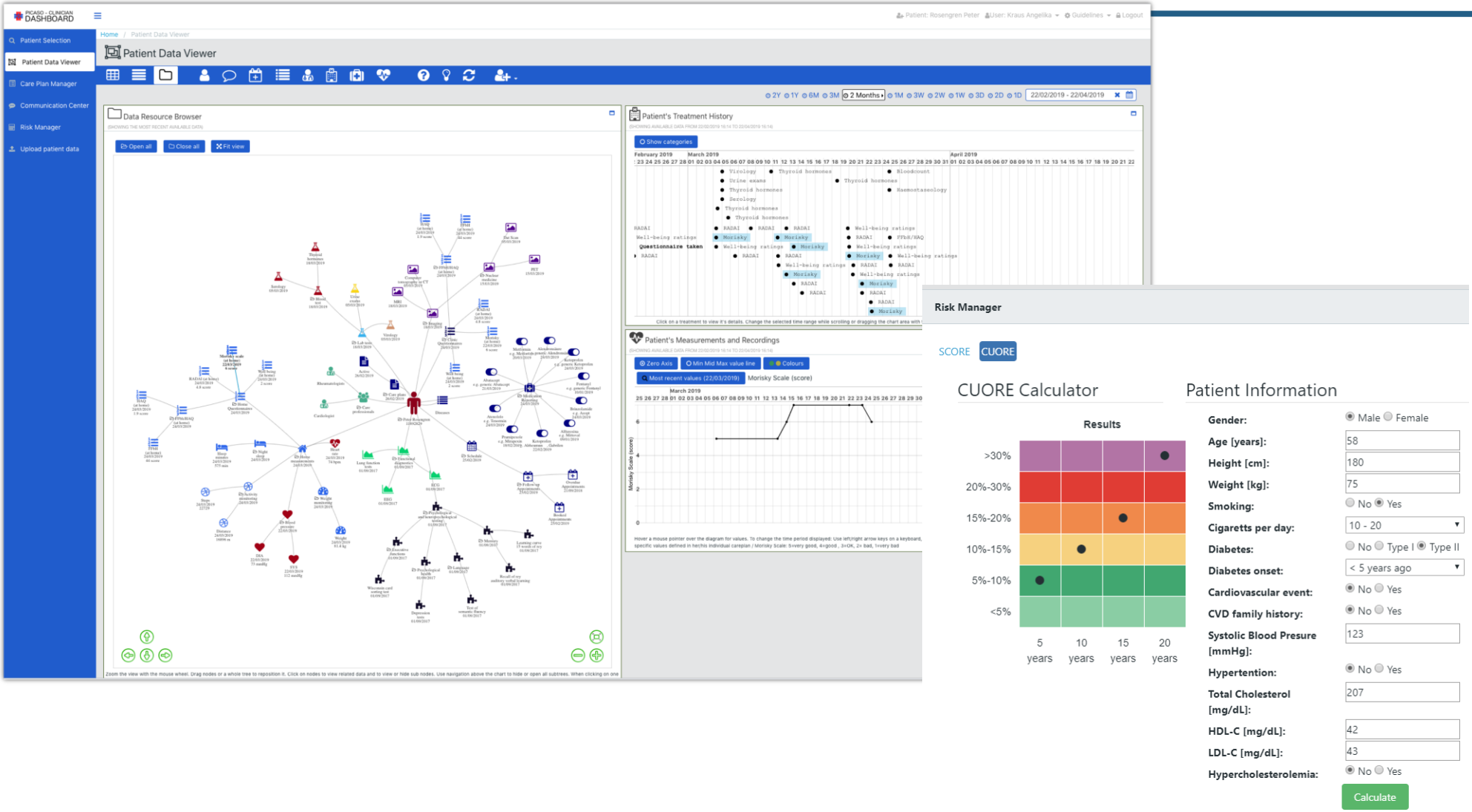


Integrated FHIR Care Plans for Patient Therapy Compliance





Integrated Care Tools for Management of Multi-morbidities



Status today

- Fully operational cloud
- Two clinical trials running
- Real patient usage over time
- UDUS (Heinrich-Heine-University Düsseldorf)
  - 15+15 patients (RA)
- UTV (University of Rome “Tor Vergata” Hospital)
  - 10 patients (Parkinson)

UDUS Usage statistics after 4 months

- 38000 patient interactions registered
  - Device measurement, Filling out Questionnaire, Confirming Medication
  - Each patient has had more than 1000 interactions during 4 months
- 6600 Bloodpressure measurements registered
- 3500 Weight measurements registered
- 3200 Activity days registered (steps, heart rate)
- 550 Health Questionnaries filled out
  - 17000 individual questions answered
- Adherence (on-time) 90%
- 25 Million steps have been walked by patients in trial

Innovation Nominations

- Picaso was nominated for the EU Innovation Radar Price and the German Innovation Award 2019.

Summary: PICASO platform

- Federated Cloud Architecture designed for ehealth – “Care Management As a Service”
  - a robust, GDPR compliant, federated cloud based system
  - with role based access for carers to distribute shared data and knowledge.
  - a framework for secure, privacy compliant, and role based information sharing
  - intuitive, interactive ad-hoc information search.
- Patient Self-Monitoring Framework
  - Scheduled vital signs measurements
  - Continuous activity and behaviour monitoring
  - Self-assessment through questionnaries
- Integrated FHIR Care Plans for Patient Therapy Compliance
  - to share patient’s care plans and orchestrate dynamic services based on narratives that define the workflow
  - coach and remind the patient to follow the prescribed medication, monitoring and ordinated activities
- Integrated Care Tools for Management of Multi-morbidities
  - providing comprehensive decision support tools for clinicians to manage multi-morbidities
  - providing decision support for analysing risks, conflicts, constraints and limitations

Thanks for your attention

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Please see us here: www.picaso-project.eu