M²OLIE

UNIVERSITÄT HEIDELBERG
ZUKUNFT SEIT 1386

Digital Patient Support Across the Continuum of Care

Implementation of a modular mobile application

GEFÖRDERT VOM
FORSCHUNGS CAMPUS
öffentlich-private Partnerschaft für Innovationen
Bundesministerium für Bildung und Forschung

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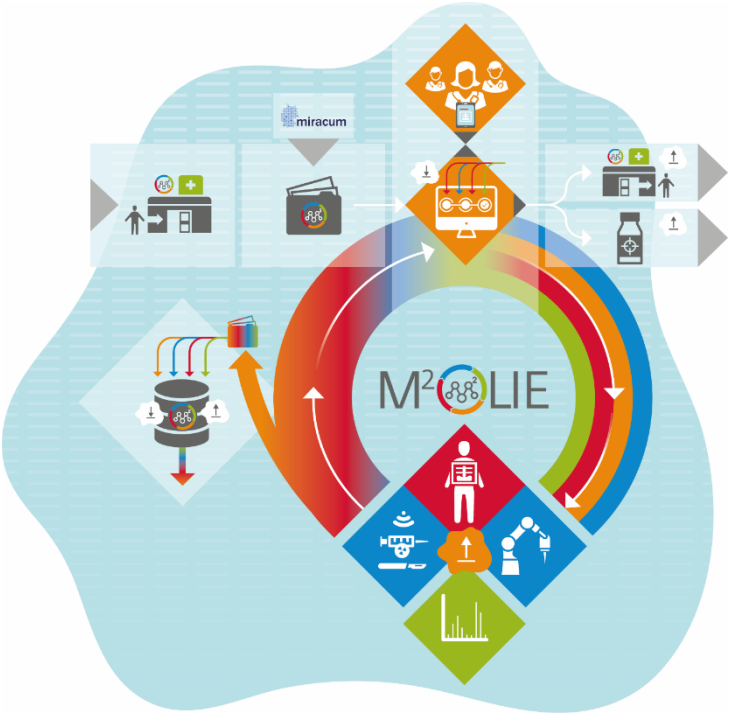
M²OLIE Closed Loop

- The team project will be hosted within the M²OLIE (“Mannheim Molecular Intervention Environment“) Research Campus
- The aim of M²OLIE is to establish the M²OLIE Closed Loop, a patient-centered and time-optimized infrastructure for innovative tumor therapies
- By means of molecular intervention, the aim is to make treatment of cancer patients with oligometastases possible in a “one-stop shop”



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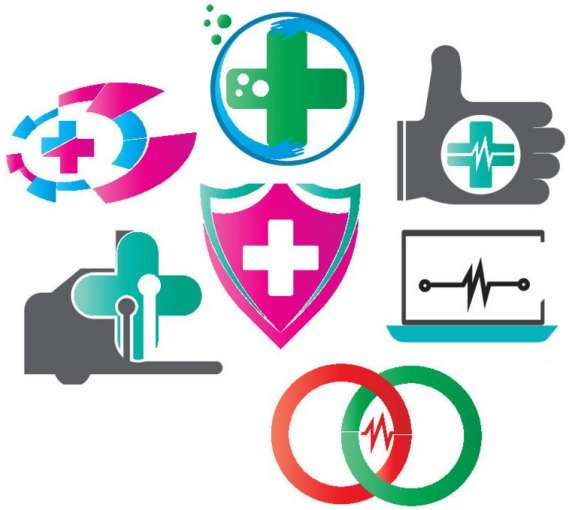
Guiding Patients Through the Entire Care Continuum

- More and more healthcare providers offer mobile apps with different purposes to their patients – a growing competitive advantage
- The amount of applications that patients require increases constantly, even inside larger institutions like hospitals
- Large scale solutions such as electronic patient records focus on aggregating patient data, but not on the overall continuum of care (also known as the patient journey)
- There are hardly any suitable solutions to guide patients throughout the whole patient journey that starts from the preparation of the first visit and continues during the aftercare



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Potential of Digital Patient Support

- Involving patients throughout the entire continuum of care is vital
  - Valuable data is generated that has hardly been collected so far
  - Particularly in the aftercare, contact with patients is often lost, making it difficult to evaluate medical outcomes

- Involving patients early in the continuum of care brings significant benefits
  - Well informed patients
  - Some steps like the patient clarification can be completed at home
  - Medical practioners can request mandatory documents prior to the stay at the institution
  - No-shows can be reduced by using reminders

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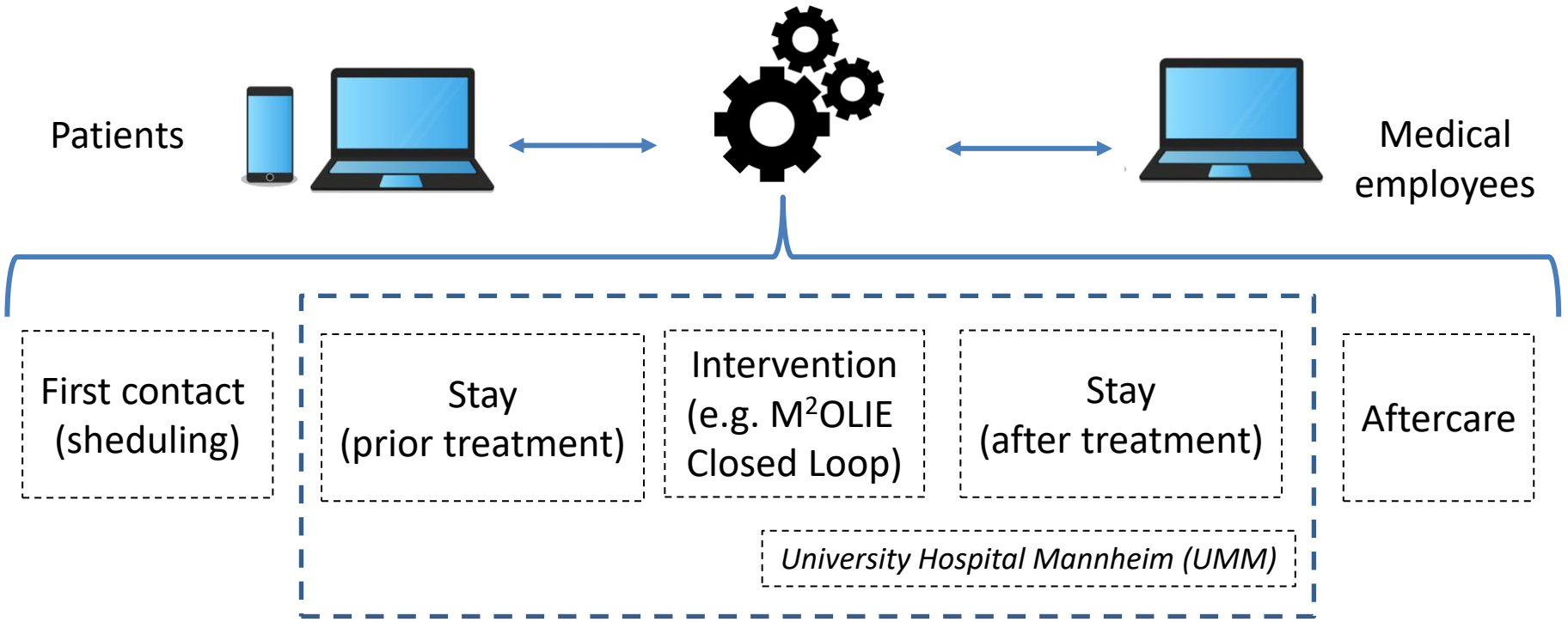
A Digital Companion For Patients



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Technical Implementation

- Mobile and web application
  - Android and iOS as well as a dashboard (browser) for medical staff
  - Architecture can be based for example on Ionic, React Native, Flutter, …

- In the context of the team project, the underlying architecture of the application will be implemented. This includes:
  - Frontend (web application/dashboard and mobile application)
    - Usability is key: Users come from all age groups and are often limited due to their medical condition
  - Backend and database
  - The amount of features will be based on the team size
  - The architecture must allow features to be added in a modular way. More features will be added in the course of master theses and other team projects.

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Potential Features

- For patients
  - Registration and login
  - Appointment booking
  - Upload/download documents
  - Fill out medical history/information form
  - Expert inquiries ("chat function")
  - Treatment overview
    - "The following treatment is scheduled at 09:30 in Room 201, House 8"
    - Directions (in-house navigation)
  - Digital "patient folder"(aftercare information, treatment summary, etc.)

- For medical staff
  - Administration interface (dashboard)
  - Task and instruction area (for patients)
    - "Stay sober from 08:00 the day before"
    - "Please upload the following information"
  - Patient inquiries ("chat function")
  - Providing general information (contact persons, buildings/rooms, treatments, etc.)

Any additional ideas of the team will be added, regardless of whether the feature is implemented as part of the team project.

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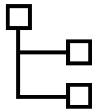
Overview of the Expected Tasks

Analysis

- Analysis of existing tools
- Analysis and specification of requirements
- Draft of the overall architecture
- Setup of the development environment
- Agree on agile development plan (Sprint length, roles etc.)

Vision

- Definition of the final architecture
- Specify final requirements and prioritize them for agile development
- Distribute tasks and responsibilities for different areas (e.g., frontend, backend, database, interfaces, testing, documentation, etc.)

Implementation

- Agile development in sprints
- Conduct meetings (Daily, Review, Retro etc.)

Presentation

- Present the results
- Handover of developed artifacts
- Finalization and handover of the documentation

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