SMITH
Smart Medical Information Technology for Healthcare

Sustainably improve Clinical Research and Patient Care.

AIMS

⇢ Merging information systems from health care and research via Data Integration Centers (DIC)

⇢ Demonstrating the effectiveness of Data Integration Centers (DIC) with three practical use cases

⇢ Optimizing clinical studies through expanded research capabilities to generate new medical knowledge

⇢ Further development and creation of education and training programs in the field of medical informatics

⇢ Integrating new research findings into personalized medicine for patients

CONSORTIUM

In the SMITH consortium, more than 300 employees from the fields of medicine, clinical practice and IT are working to link research and healthcare. Medical data routinely generated in everyday clinical practice is processed and made available to medical research in a standardized form. Patients benefit from reliable research results, more precise diagnoses and better treatments.

In order to link data from healthcare and research, the participating university hospitals in Aachen, Bonn, Essen, Halle, Hamburg, Jena and Leipzig have established sustainable Data Integration Centers (DIC). The network partners Ruhr University Bochum, the Düsseldorf University Hospital and the University Medical Center Rostock are preparing the structure of a DIC. The IT infrastructure at the university medical sites is being established in close cooperation with the universities of Aachen, Jena and Leipzig, two non-university research institutions and four industrial partners.

SMITH is one of four consortia of the Medical Informatics Initiative (MII) funded by the German Federal Ministry of Education and Research (BMBF).

USE CASES

The Methodical Use Case:

PheP – Phenotyping Pipeline supporting Clinical Evaluation Projects

In the methodological Use Case PheP, the consortium is developing innovative data analytic methods that automatically extract medical information from electronic patient records. Evaluation projects and calculations on the existing data lead to continually growing patient-related information. Clinical research and patient care can be optimized in the long term, thanks to the rich data stock.

The Clinical Use Cases:

ASIC – Algorithmic Surveillance in Intensive Care

With the ASIC Use Case, SMITH promotes the improvement of patient care through the use of available clinical routine data. This is demonstrated by the example of the treatment of patients with Acute Respiratory Distress Syndrome (ARDS), a disease that currently still causes the death of around 40 percent of all affected patients. The ASIC App developed for this purpose serves as an early warning system by alerting healthcare professionals to potential ARDS.

SMITH Added Value

For the researcher
Cross-site, secure access to research-relevant data and algorithms

For the medical scientist
Decision support for individualized patient care

For the patient
Improvement and personalization of diagnostics and therapy

For the life science industry
Innovation through effective research collaborations

HELP – Guideline-based Use of Antibiotics in Infectious Medicine

The HELP Use Case thematizes the guideline-compliant use of antibiotics for the targeted control of certain bacterial infections. The focus is on supporting infectiology by means of the HELP App. This provides medical staff with rapid information for a responsible antibiotic therapy of staphylococcal bloodstream infections.
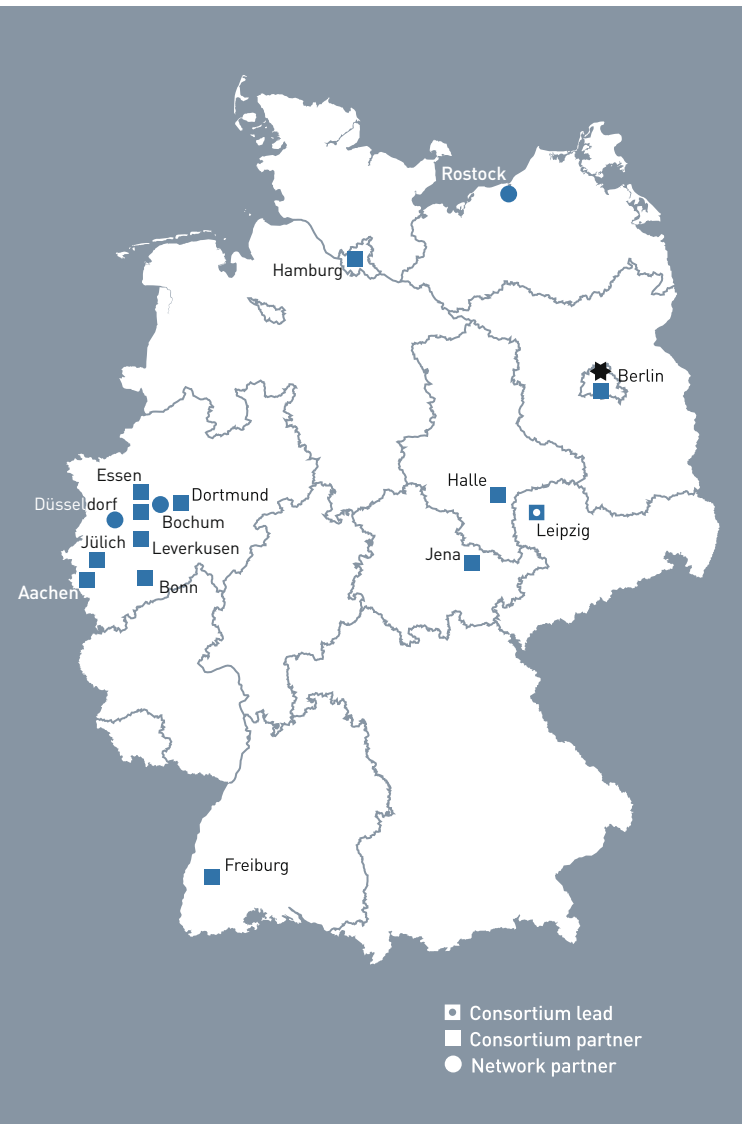
MEDICAL INFORMATICS INITIATIVE GERMANY

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SMITH
Smart Medical Information Technology for Healthcare

Funded sites of the SMITH Consortium
during the development and networking phase

☐ Consortium lead
◻ Consortium partner
● Network partner

CONSORTIUM PARTNERS

Aachen:
■ RWTH Aachen University /
University Hospital RWTH Aachen*
Berlin:
■ ID Information & Documentation in
Health Care GmbH & Co. KGaA
Bonn:
■ University Hospital Bonn*
Dortmund:
■ Fraunhofer Institute for Software
and Systems Engineering ISST
Essen:
■ März Internetwork Services AG /
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■ University Medical Center
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Jena University Hospital*
Jülich:
■ Jülich Research Center
Leipzig:
◻ Leipzig University / University of
Leipzig Medical Center*
Leverkusen:
■ Bayer AG

* University hospital with Data
Integration Center (DIC)

DIC DATA INTEGRATION CENTER — MEDICAL INFORMATICS INITIATIVE GERMANY

NETWORK PARTNERS

Bochum:
● Ruhr University Bochum
Düsseldorf:
● Düsseldorf University Hospital
Rostock:
● University Medical Center Rostock

Coordination Office

Berlin:
✷ TMF - Technology, Methods and
Infrastructure for Networked
Medical Research (TMF)
✷ German Association of Academic
Medical Centers (VUD)
✷ German Association of Medical
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