Improved surveillance of haemophilia home treatment using a telemetric smartphone application

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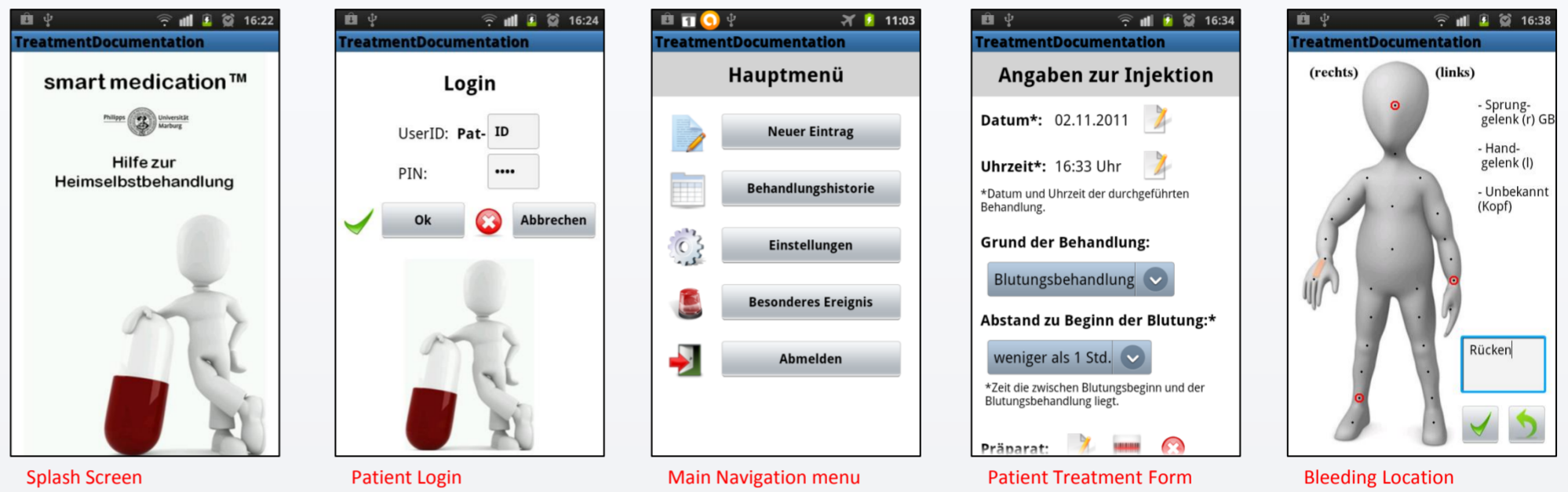W. Mondorf (Haemostas, Frankfurt, Germany)
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Background

Documentation of hemophilia home treatment is usually done by analysis of paper based substitution calendars. Transferring the written entries into a database is time consuming and bears the possibility of errors. Bleeding or treatment problems are often identified months later than they occur following regular patient consultations. In contrast, telemetric tools allow real-time surveillance of treatment and bleeding episodes as well as automated online analysis of these data.

Method

A new telemetric system for documentation of home treatment called "smart medication" was developed in collaboration with medical experts at the Philipps-University in Marburg, Germany. Based on leading smartphone operating systems like Google's Android and Apple's iOS, an application was built for real-time surveillance of treatment and bleeding episodes and online analysis of these data. It consists of three components:

1 - Patient's App
2 - Medical Centre's App
3 - Medical Centre's Website

1 - Patient's App

A patient based smartphone for patient entry of treatment and bleeding data. It can also be used as emergency phone and for sending written messages or photographs. Unusual bleeding or treatment patterns generate immediate alert messages to the hemophilia center.

Splash Screen   Patient Login   Main Navigation menu   Patient Treatment Form   Bleeding Location
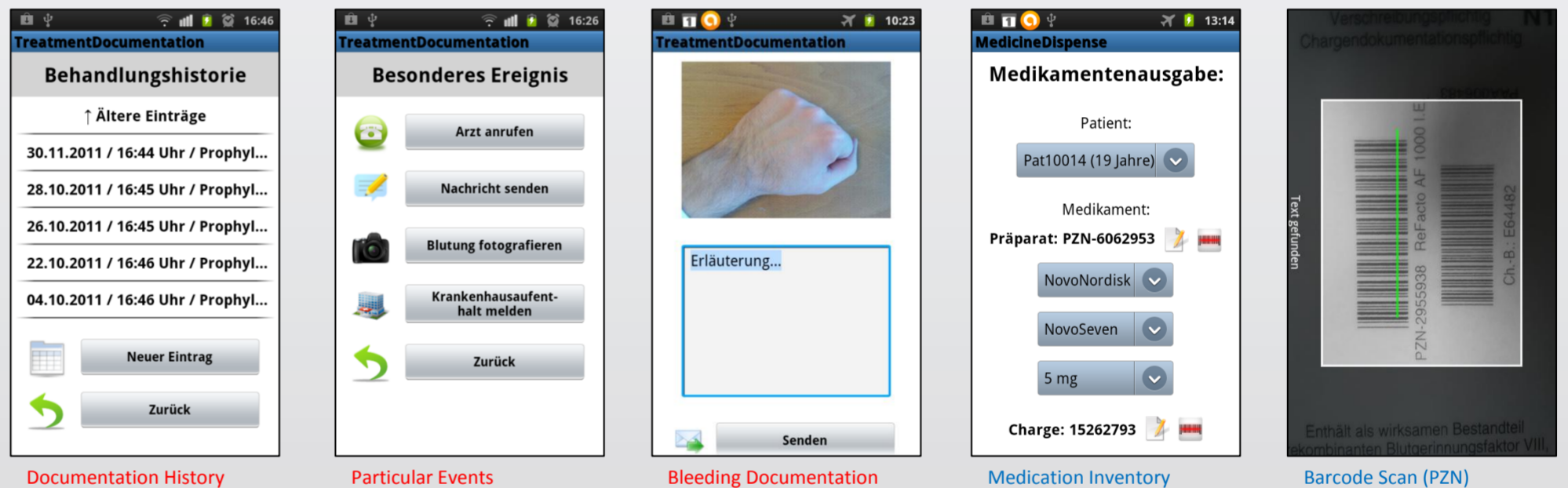
2 - Medical Centre's App

A smartphone at the hemophilia center for easy medication management. Concentrates given to the patient are assigned to the patient's electronic file allowing early identification of out-of-stock or non-documentation problems.

Documentation History   Particular Events   Bleeding Documentation   Medication Inventory   Barcode Scan (PZN)

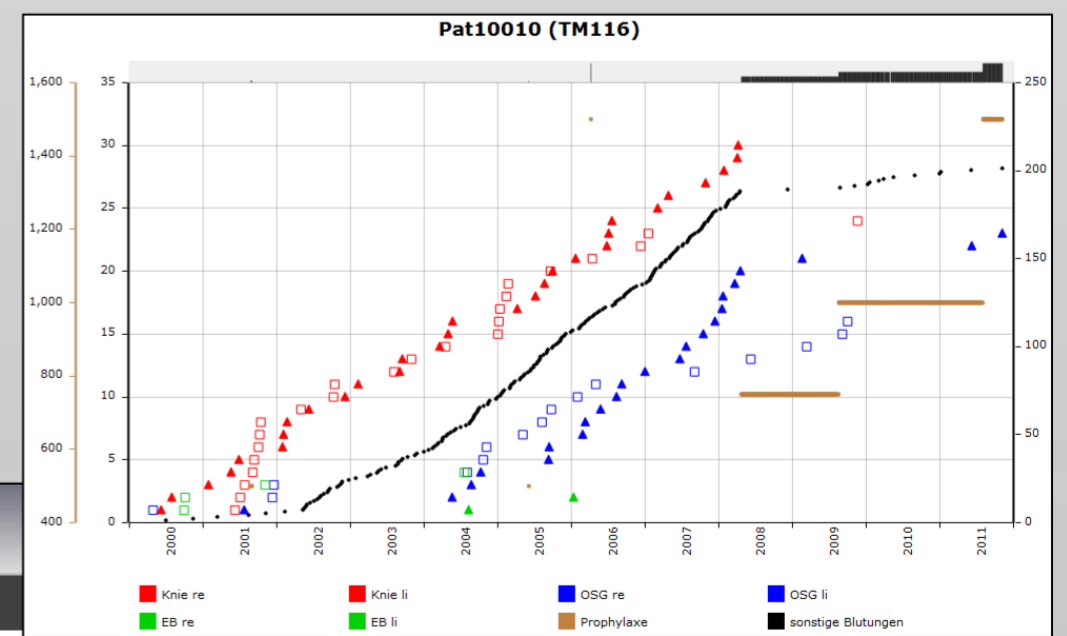### 3 - Medical Centre's Website

A website at the hemophilia center for rapid and online surveillance of treatment data, bleeding episodes and medication management. Own data can be compared to pooled data of all other centers for benchmarking purpose. Long term data collections enable identification of possible target joints at an early stage.

Summary

We hereby introduce a smartphone application for documentation of treatment and bleeding episodes and easy medication management. Online surveillance in hemophilia home care allows early identification of current treatment and bleeding problems and the development of possible target joints.

Monitoring Website: Patients Details   Monitoring Website: Patients Bleeding History
Monitoring Website: Patients Overview

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