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Smart Medication - a new telemetric smartphone application for monitoring and evaluation of hemophilia home treatment

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Background: Hemophilia A and B are rare diseases and require medical care in specialized treatment centers. Because of long distances between patients and hemophilia center, telemedicine may be helpful to bring the right patient to the right doctor. Bleeding or treatment problems, usually reported during consultation at the hemophilia center, may be identified earlier and close to when they occur. Automated documentation and online analysis of the data is less time consuming and helps to avoid documentation errors.

Method: A new telemetric system for documentation of home treatment, based on Google's Android and Apple's iOS, called "smart medication" was developed in collaboration with IT-experts of Philipps-University, Marburg, Germany. The application was built for real-time surveillance of treatment and bleeding episodes and online analysis of the transmitted data. It consists of three components: 1. A patient based smartphone for simple and rapid entry of relevant treatment and bleeding data. It can also be used as an emergency phone, for sending written messages and photographs or to inform about hospitalization. Unusual and frequent bleeding or treatment patterns generate immediate alerts to the hemophilia center. 2. A smartphone at the hemophilia center front desk for easy medication management. Concentrates given to the patient are assigned to the patient's electronic file allowing early identification of out-of-stock, no documentation problems, and a complete backtracking. 3. A web based monitoring tool at the hemophilia center for online surveillance and analysis of treatment and bleeding patterns and control of medication management. So far, 30 Patients with severe hemophilia A or B from two German Hemophilia centers were allocated. Practical experiences and results from statistical tools will be presented.

Summary: Smart medication is a new smart phone based tool for monitoring and evaluation of treatment and bleeding in hemophilia home care. First real time experiences and results from analysis tools will be presented.