

Pre-eclampsia Use case:

Business Case:

Pre-eclampsia is a complication in pregnancy caused by multiple factors. In order to detect pre-eclampsia, weight, blood pressure and proteinuria of women is monitored during pregnancy.

Goals:

In this use case we consider the following goals

- Representation of the monitoring process by quantitative measures
- Rules for deciding about the need for hospitalization of a persons.

Data Task:

This use case was mainly considered for evaluating the `DPATimeSeries` methodology as presented in [10] for decision point analysis. Time series of measurements for weight, systolic and diastolic blood pressure, and proteinuria were generated for 300 cases containing 8% of cases with pre-eclampsia.

Business and Data Understanding

Application Environment:

This application is general without reference to a specific business environment. The scope of the process is rather simple and defined by six types of events: Proteinuria Check, Blood Pressure Check, Weight Check, Hospitalize Patient, Homecare, Giving Birth. The checks are repeated from the 20th week of pregnancy onwards. The BI-scenario is BI separated of strategy performance, but the results of the analysis can be used later on for defining new business strategies for monitoring pregnancy.

Business Perspective:

The perspective in this use case is on the customer who is owner of the process and process subject. Furthermore, medical practitioner are passive actors who decide about hospitalization.

BI View:

This is a typical example of data in the state view, i.e. we have time series about the medical parameters.

Analytical Goal:

The KPI is defined by hospitalization in dependence on the temporal behavior of the medical parameters. Correspondingly the analytical goals are descriptive goals (reporting) and predictive goals (classification rules allowing a decision about hospitalization)

Assessment of Data:

Due to the control through simulation, the data is complete allowing the evaluation of algorithms. For reporting purposes, summaries for the instances are calculated.