

## 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.