Drug substitution occur as a result of saving expenditures on medicine. Substitution of drugs contribute to medications error in the clinic, which can affect the patient safety. The implementation of drug substitution is important in order to reduce medications errors.

Risk assessment of drug substitution before implementation in the clinic is performed by employee from the hospital pharmacy in region Northern Jutland. The assessment occurs manually and is based on experience, which make it vulnerable and person-dependent.

The aim of this project is to develop a rule-based system for risk assessment of drug substitution and evaluate the applicability of the system for the purpose of the issue. Risk assessment is based on risk factors, which is described in the literature and is considered doing the current process. On the basis of this a risk score is calculated as an assisting tool for the employee in the hospital pharmacy to assess and differentiate between the drug in need for particular attention before implementation in the clinic.

It is concluded that a rule-based system has the applicability for risk assessment of drug substitution, but it is necessary to modify the system in order to improve the current assessment of drug.