The most critically ill patients in our health care system are treated in the intensive care unit (ICU). Here, monitoring devices gather a wide range of physiological information every second, which, together with clinical, administrative, and laboratory information makes the ICU the most data intensive ward at any hospital. In addition to the data intensity and disease severity, patients display a highly heterogeneous disease background, altogether placing the ICU as an extremely complex clinical environment. The complexity, heterogeneity and lack of effective interventions together with the massive amount of data represents an opportunity to use data mining techniques for better patient stratification and care delivery in the ICU.

**AIM**

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**COHORT & DATA**

Based on routinely collected information in the electronic medical records (EMRs), fine-grained patient phenotypes will be characterized and patient stratification approaches will be applied to identify subgroups of patients with different treatment outcomes.

The study population consists of 11,163 intensive care patients admitted to the Danish capital region ICU (AfD 41311) in the period November 2004 to June 2016. Information about more than 20 years of pre-ICU health history is obtained from the National Patient Registry. Information about the ICU stay itself is obtained from the Critical Information System used by the ICU between 2004 and 2016.

In Denmark, the conditions for registry based research are unique due to the comprehensive and population-wide collection of electronic health care data.