

**Crude and Net Measures of Predictive
Performance for Risk Prediction with
Competing Risks Data**

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ABSTRACT

In survival analysis, the predictive discrimination performance of a risk prediction model refers to the ability of the model to separate subjects who will develop the event from those who will not. In the presence of competing risks, there are two possible perspectives in assessing predictive performance, namely the crude and net perspectives. In this talk, I will first introduce a crude measure, the polytomous discrimination index (PDI), for assessing a competing risks regression model that predicts the cumulative incidence probabilities. The methods are applied to a study of monoclonal gammopathy of undetermined significance, where the two competing risks events are diagnosis of plasma cell malignancy (PCM) and death without PCM. Next, I will introduce a net predictive performance measure for scenarios where the competing risks event is a surgical procedure such as transplantation. The methods are illustrated using a study of pediatric acute liver failure.