

PATIENT TRAJECTORIES AS PREDICTORS OF SURVIVAL

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Cardiologists are interested in determining the effect of a patient's admission directly into a cardiology unit compared to an unspecialized hospital unit on one-year mortality after acute myocardial infarction (AMI). A simplistic approach to this problem would be to classify in a binary way the patient's hospital admission into a cardiologic intensive care unit (yes/no). However, this simplistic approach does not take into account the complexity of the patient's pathways for treatment of AMI. The different trajectories followed by patients as they progress through various hospital procedures are used to determine which sequence of procedures are more predictive of survival. The statistical unit is a trajectory, with symbolic regression methodology applied to these trajectories. This symbolic data analysis, contrary to standard analysis, allows identification of potential interactions between the severity of AMI and the patient's trajectory in the prediction of a patient's death after AMI.