

DHC - Chair Personalized Medicine

Master Thesis Proposal

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Topic:

Economic outcome of diverging treatment decisions for people with low back pain

Each year millions of people experience unspecified low back pain, the most common health-related problem worldwide, which ultimately results in a tremendous economic burden for healthcare systems. The goal of this research endeavor is to understand more about high cost patients and the economic impact of current treatment decision-making for people with low back pain. Based on the MSDW EHR-data, this feasibility study will examine different patterns of healthcare resource utilization, while also identifying cost-drivers and cost-saving potentials due to treatment deviations from current clinical guidelines. For this, different (machine learning) algorithms could be tested and applied, for example regression models and/or other unsupervised clustering methods. In an alternative approach, we could adopt the physician's point of view and explore the 'reward'-function that doctors have in mind when treating patients with low back pain by using inverse reinforcement learning algorithms.

If you are interested in this topic or you have any open questions, do not hesitate to simply drop me an email.