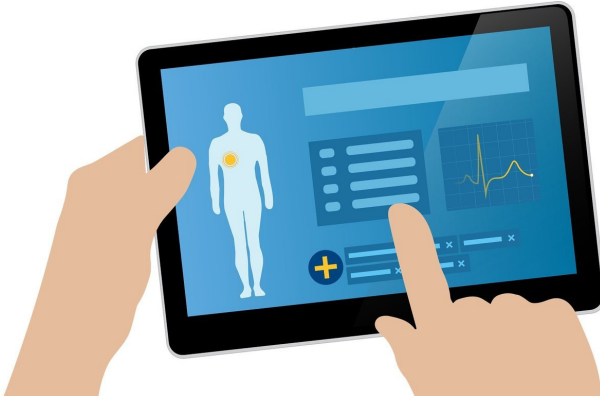# Dynamic personalize care: Implementing an in-clinic mathematical prediction app

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The DASPO-group for data analysis and survival for personalized oncology has developed an app that provides dynamic predictions of survival for patients suffering from soft tissue sarcoma. Patients with soft tissue sarcoma often have a poor prognosis even after surgery to remove the primary tumor. Local recurrence (tumor growth at site of surgery) and distant metastasis (tumor growth at a different site) are of great concern and are important indicators for a patient's future prognosis. The developed app allows for inclusion of updated patient information, such as development of a local recurrence or distant metastasis during follow-up. The app provides updated predictions from different time points during follow-up.

The dynamic PERSARC app

The dynamic PERsonalised SARComa Care app, is available in the Appstore and Google play store. It predicts a patient's probability of surviving an additional five years from a prediction time point after surgery, based on patient- and disease-specific characteristics. The model includes the occurrence of local recurrence and distant metastasis, which have a significant association to survival. It was developed by Anja Rüten-Budde Ph.D.-student at the Mathematical Institute (MI) and project leaders Marta Fiocco (MI) and Michiel van de Sande (LUMC).

Researchers from Leiden University Medical Center was granted funding from the Dutch Cancer Society (KWF) to implement shared decision making for high-grade soft tissue sarcoma patients in the Netherlands. The goal is to ensure that soft tissue sarcoma patients receive personalized care, in which risks and benefits of treatment options and patient preferences are balanced. Part of the implantation strategy is the introduction of the PERsonalised SARComa Care app to clinical practice.

More information: A. J. Rueten-Budde, M. van de Sande, V. van Praag, PERSARC study- group, and M. Fiocco. External validation and adaptation of a dynamic pre- diction model for patients with high-grade extremity soft tissue sarcoma. Submitted.

Rueten-Budde, A.J., van Praag, V.M., PERSARC studygroup, van de Sande, M.A.J., Fiocco, M., 2018. Dynamic prediction of overall survival for patients with high-grade extremity soft tissue sarcoma. Surgical Oncology, 27, pp.695-701.

A. J. Rueten-Budde, V. van Praag, PERSARC study- group, and M. Fiocco. A prediction model for treatment decisions in high-grade extremity soft-tissue sarcomas: Personalised sarcoma care (PERSARC); European Journal of cancer 2017, Volume 83, Pages 313–323

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