Department. Thus, the patient becomes a key actor in the quality and safety of its own treatment. In conclusions: empowerment of the patient is essential for two reasons, on one hand at the individual level by strengthening its capacity to act on health determinants and on the other hand at the organizational level with continuous improvement of the Radiotherapy Department. Our goal is to strengthen the quality and safety of treatments, adjust them to the life project of the patient and promote a participative approach focused on the patient’s needs and expectations.

Material and Methods: 115 prostate plans were fully automatically generated using Erasmus-ICycle. These plans were based on a fixed ‘wish-list’ with constraints and objectives in a predefined order of priority. An existing OVH model was modified and used to predict DVHs for these patients. First, the entire DVH of the rectum, bladder and anus of a validation cohort (N=57) were predicted, using the plans of an independent training cohort (N=58). To investigate the impact on prediction accuracy of an enlarged training cohort, the DVHs were also predicted by a leave-one-out method. The predicted rectum Dmean, V65, and V75, and Dmean of the anus and bladder were compared with the achieved values to validate the OVH QA tool.

Results: For rectum, the prediction errors (predicted-achieved) were small: -0.2±0.9 Gy (means±1 SD) for Dmean, -1.0±1.6% for V65, and -0.4±1.1% for V75. 72% and 96% of the predicted rectum Dmean had prediction errors within 1 Gy and 2 Gy, respectively. For Dmean of anus the prediction error was only 0.1±1.5 Gy, whereas for the bladder it was much larger: and 4.8±4.1 Gy (see also Fig 1). Increasing the training cohort to 114 patients (using leave-one-out) led to minor improvement.

Conclusion: A dataset of consistently prioritized Pareto-optimal prostate IMRT plans was generated. This dataset can be used to validate any planning QA model and will be made publicly available at the Treatment Planning QA Section of http://www.erasmusmc.nl/radiotherapie/research/radiationoncolgymedicalphysicandimaging/research_projects. It was applied here to assess the accuracy of the OVH model. The OVH model was highly accurate in predicting rectum and anus DVHs. For the bladder large prediction errors were observed, which indicates that the OVH has difficulty in capturing the interdependence of sparing different OARs. We are currently