

## CONFERENCE ABSTRACT

# How medical technology can support health care management – Introduction of a telemedicine-based integrated care management, for improved diagnosis and treatment in Parkinson's disease through intersectoral and interdisciplinary collaboration.

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**Introduction:** The specialist care of Parkinsonian patients nowadays takes place predominantly in larger cities, while in many rural regions in Germany there is an under-supply. A frequent problem in advanced stages of the disease are motor fluctuations, which are often only recognized by neurologists at a late stage. In order to meet the challenges of everyday clinical practice in the area of office-based neurologists, particularly in the healthcare-poor regions, the authors propose a conceptual new form of integrated care which, in addition to the currently used diagnostic possibilities, by the use of an objective measurement method (Parkinson Kinetigraph PKG™) shall improve the ambulatory and inpatient parkinsonotherapy.

**Method:** Integrated care concept - Through the introduction of a telemedicine-based integrated care management model for the improvement of diagnosis and treatment of the Parkinson's disease, the intersectoral and interdisciplinary cooperation, particularly in the healthcare-poor regions, can be modified sustainably.

**Results:** The proposed care concept is based on a three-stage decision-making system and an assessment by an expert who provides its expert opinion for therapy optimization to the office-based neurologist. Through the telemedical use of a kinographic measurement method (PKG™) the ambulatory therapy of Parkinson's is intended to be improved. No longer the patient has to be moved, but only the data. This approach can improve the diagnostic accuracy, since due to the integration of the experts for movement disorders, the knowledge is transferred into the outpatient care. This can be improved, in particular, if this is validated in later years of the disease as this becomes better over time. It can lead to an improvement of the treatment according to the treatment guidelines across all levels of care (intersectoral and interdisciplinary) due to a consistently structured and controlled care process. Non-optimally adjusted Idiopathic Parkinson's Syndrome IPS (i.e. dyskinesia, fluctuations) is

associated with significantly higher overall costs than optimally adjusted IPS. The objective measurement by means of the PKG, can improve the therapy management of an IPS patient permanently, as fluctuations can be better controlled and due to the optimization of the drug therapy, the time until more invasive therapies (i.e. deep-brain stimulation, dudopa pump, apomorphine infusion) are required, can be extended. This also ensures, that the specialist centers and clinics treat only those patients who actually have the need for advanced treatment (i.e., patients with complex fluctuations) and then they can do so in a timely and professionally optimized manner. For the patient, this can improve the quality of life with the disease, it increases the safety, as unwanted events, such as fractures caused by fall, are prevented and consequently costs can be avoided.

**Discussion and Conclusions:** Through this approach, the latest knowledge on the treatment of Parkinson's disease can be made available in local care and the therapy can be optimized. This leads to a quality improvement in health care and to significant cost savings through a case shift from inpatient to outpatient. The intersectoral and interdisciplinary cooperation will be changed sustainably, particularly in regions with limited supply, due to the telemedicine-based integrated care management.

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**Keywords:** parkinson disease; integrated care model; objective measuring; parkinson kinetigraph pkg™; intersectoral

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