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.

INTRODUCTION:

EPIDEMIOLOGY
- Prevalence of patients with Parkinson’s disease in Germany is reported with 120,000-150,000 (2.2).
- In more than 75% of the Parkinson’s patients idiopathic Morbus Parkinson, meaning without a known cause so far (1).

The burden of Parkinson’s disease is growing due to a consistently increasing number of elderly patients, and this trend will continue in the future (2).

According to the German Institute of Medical Documentation and Information (DIMDI), ca. 200,000 people in Germany suffer from Parkinson’s disease. Moreover, there is a probability of a high underestimated number of affected persons (1). According to the World Parkinson’s disease Association, the incidence risk increases especially after the 65. life year and decreases beyond the 84. life year (4).

In light of the increasing life expectancy of the population in the future a growing number of Parkinson patients can be expected. In more than 75% of cases the Parkinson syndrome is idiopathic Morbus Parkinson, meaning without a known cause so far (1).

CURRENT CARE STRUCTURE FOR PARKINSON’S DISEASE
- The special care of Parkinson patients nowadays take place predominantly in large clinical departments or as individual patients in Germany in an inpatient setting (3). Target organ dysfunction affecting the nervous system is the Parkinson disease.

Office-based Neurologists have to cover the broad spectrum of Neurological diseases among their patients. They have a tight budget of at 5-11 min on specialized office 30 min (7).

Due to insufficient capacity at office-based Neurologists, they shift the buck to Neurologists at specialized centers. They have a limited time budget of ca. 5-15 min (in specialized offices 30 min) (7).

Currently the Parkinson disease is mainly treated with the non-pharmaceutical and non-medical measures and a non-pharmaceutical measures usually do not lead to any significant improvement (5). A frequent problem in advanced stages of the disease are motor fluctuations, which are often unwanted events, such as fall, fractures, tremors, and others.

The procedure is:
- Preparation of a non-medication plan
- Prescription of medication and if necessary Phone-Logo- and by-the-apotrope
- Typical treatment interval: 21 days
- Daily (7) activities are planned

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The objective measurement by means of the PKG, can improve the therapy management of an individual patient by the Parkinson expert (Figure 3).

Figure 1: Current care structure in Parkinson disease

RESULTS:

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.

The approach focuses four core principles:
- No longer a patient has to be treated, but the dignity of the patient (Figure 2).
- In addition to the currently used diagnostic possibilities, the use of an objective measurement method helps Parkinson expert to get a better overview of the Parkinson’s disease and optimized Parkinson therapy.

This approach can improve the diagnostic accuracy, among others by the integration of the experts for movement disorders, the knowledge is transferred into the inpatient care. At a change of the current system which is associated to is the office-based neurologist for the individual patient by the Parkinson expert (Figure 3).

Figure 2: Alternative care structure within the project

CONCLUSIONS:

Through this approach, the latest knowledge on the treatment of Parkinson’s disease can be translated into everyday care and thus the therapy can be optimized.

This leads to a quality improvement in health care and a significant cost savings through less care periods and a better management of the disease.

REFERENCES:
(11) DGN S3-Guideline Idiopatic Parkinson-Syndrome, 2016.