

Parkinson's disease, deterioration during hospitalization

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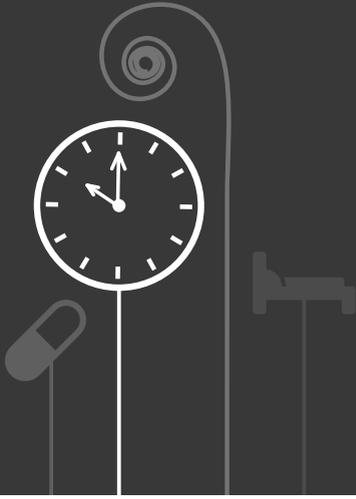
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CHAPTER 10

VALORISATION



INTRODUCTION

Society increasingly demands accountability for work performed, especially when public money is spent. This applies not only to business and government agencies, but also to scientific research.

Valorisation is ‘the process of creating value from knowledge, by making this knowledge available and suitable for economic and social exploitation and to translate this knowledge into products, services, processes and new business’. Therefore research results should be brought to attention of potential users and must be translated into social, economic and/or financial value.^{1,2}

ECONOMIC AND SOCIAL RELEVANCE OF RESULTS OF THIS THESIS

In this thesis we gave some suggestions for improvement of care during the hospitalization of Parkinson’s disease (PD) patients, e.g. self-administration of PD medication, proactive multidisciplinary approach, education of health care professionals, and prevention of infections and delirium (Chapter 3,4,5,6,7). These recommendations might eventually result in both economic and social valorisation.

Economic valorisation

In the Netherlands in 2011 the total number of patients with Parkinsonism was estimated 29,000. In the next decades the median age of the population will rise and as a result the number of PD patients will probably increase.^{3,4}

Patients with PD use a lot of healthcare facilities and as such related costs for PD and other forms of Parkinsonism are high. In the Netherlands in 2011 this was estimated at 267 million Euro per year.⁵⁻⁷ Hospital admissions account for 8.5% of these costs.⁷ We showed in this thesis that hospital stay is longer due to iatrogenic deterioration of PD symptoms. Strict adherence to our recommendations will most likely result in a decrease of length of hospital stay with concomitant decrease of costs. Although we didn’t do a proper cost-effectiveness study, which would be preferred, we can roughly estimate the unnecessary direct hospitalization costs concerning admissions with PD medication errors. Chapter 4 shows that medication errors occurred in 39% of admissions, which resulted, on average, in a longer hospitalization of 1.7 days compared to admissions without PD medication errors. PD hospitalization costs are estimated at 23 million Euro per year, spread over 1492 hospitalizations with an average duration of 12.6 days.⁷ If we extrapolate our findings to the Dutch situation it means that in 576 hospitalizations (i.e. 39% of total admission number) per year PD medication errors occur resulting in 979 extra hospitalization days (i.e. 576 x 1.7 days) per year. On average the cost of an admitted PD patient in The Netherlands health care system is 1,207 Euro

per day. This results, for the Netherlands only, in 1.18 million Euro per year of extra direct hospitalization costs because of PD medication errors, which is preventable and therefore unnecessary spent public money.

Improvement of care during hospitalization by implementing the recommendations of this thesis will result in reducing needless spending of both private and public money, which therefore becomes available for other (community related) purposes.

Social valorisation

PD has a high impact on quality of life of PD patients.⁸⁻¹⁰ Moreover, the patient is not the only one affected by the disease. Because of the disease, with both motor and non-motor symptoms, the patient needs a lot of attention by partner, children, and/or other caregivers, certainly in the more advanced stages of the disease. Now that the government has come up with the 'participation society' the pressure on the caregivers will only increase. A lot of these 'voluntary' caregivers have busy lives (own household, jobs), even without this extra care they (have to) provide. Although hospitalization of PD patients for some caregivers might be a temporarily relief, deterioration of PD symptoms will result in additional work after discharge from hospital.

This thesis shows that improvement of care during the hospitalization of PD patients will not only result in better health conditions of the PD patient but will also cause less distress and higher satisfaction for the caregiver.

PRODUCTS AND PROCESSES

To accomplish the recommendations, new developments will be valuable to implement. This could include an electronic notification that warns the hospital's Parkinson's team when a vulnerable PD patient is admitted. Another point of focus could be PD medication errors, for example by introducing a warning system that informs a nurse that the patient needs his or her medication. One option is a nurse's mobile phone notification on specific moments linked to the electronic medication systems (which may be coupled to the home pharmacy to provide an accurate home medication schedule). Another option, although maybe less effective but easier to introduce, could be the distribution of cards with (warning) instructions that the patient or caregiver can leave in the patient's room in case of hospitalization. Our data support the introduction of new (technological) products to improve hospital care to lead to both social and economic benefit.

TARGET GROUPS THAT CAN BENEFIT

PD patients are a vulnerable patient group for adverse events during hospitalization. One of the causes of these adverse events is due to difficult medication schemes. There are however more older patient groups with complex medication regimes that are at increased risk for complications during hospitalization. Examples are patients with dementia, cancer, and multimorbidity in general.¹¹

Other specialties and its patient population could benefit from the recommendations in this thesis to improve care, since most of these are generalizable. Next to this, the methods we used in this thesis to analyze a specific vulnerable patient group could be interesting for other patient groups as well. This could result in other specific recommendations to improve care for these patients.

CONCLUSION

Valorisation of our study results are related to reduction of direct health care costs by strict adherence to our recommendations, which are easy to implement and to the development of new IT products based on our findings and recommendations that might be offered to the clinician to further improve care for PD patients. As such, our study and recommendations could lead to both economic and social valorisation.

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