

Hospitalization Costs of Motor Neurone Diseases (MND) in Germany

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Objectives:

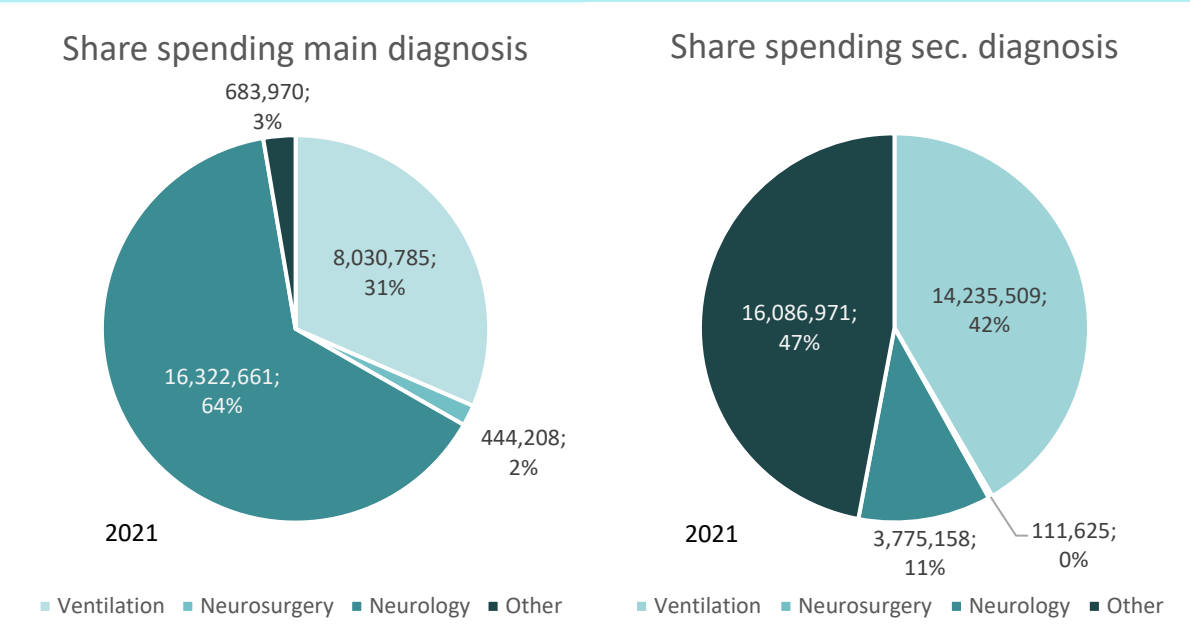
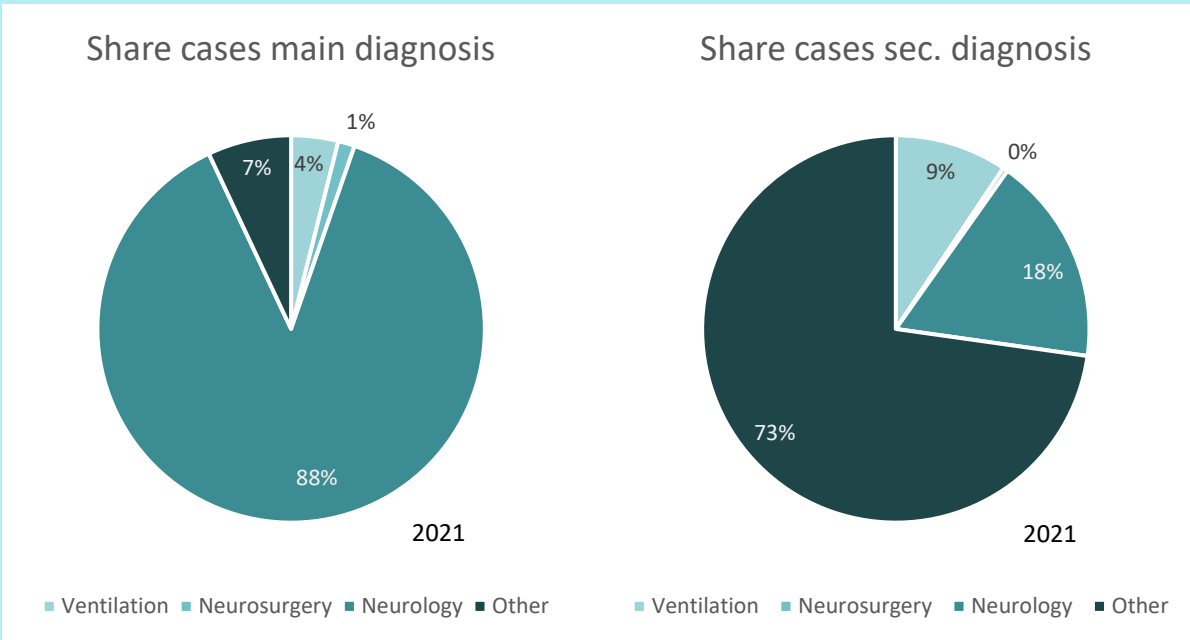
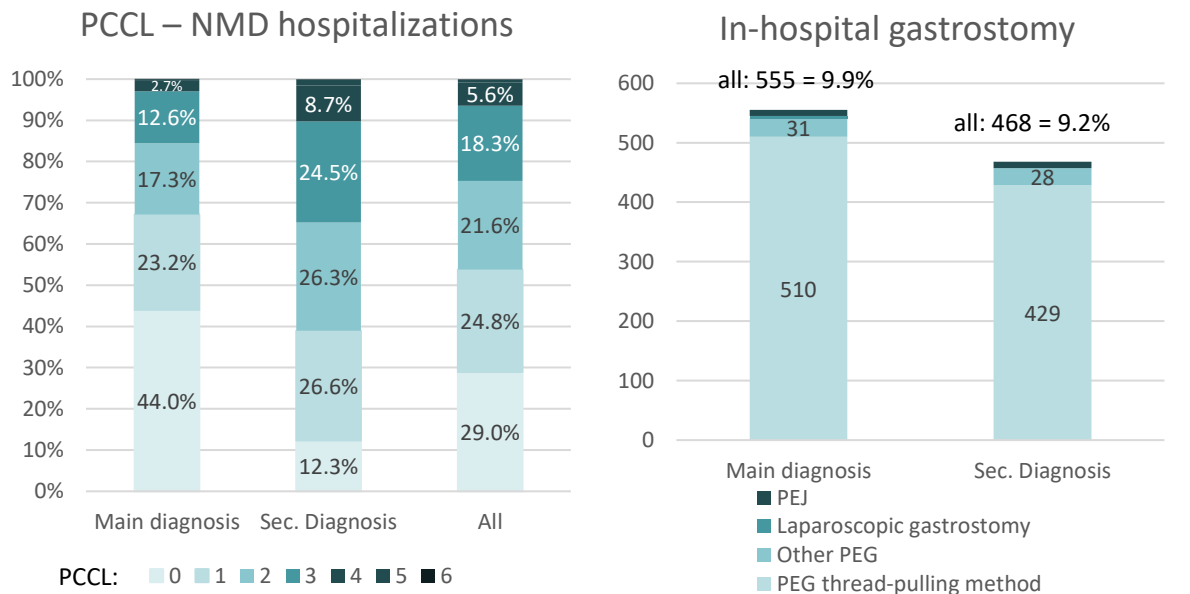
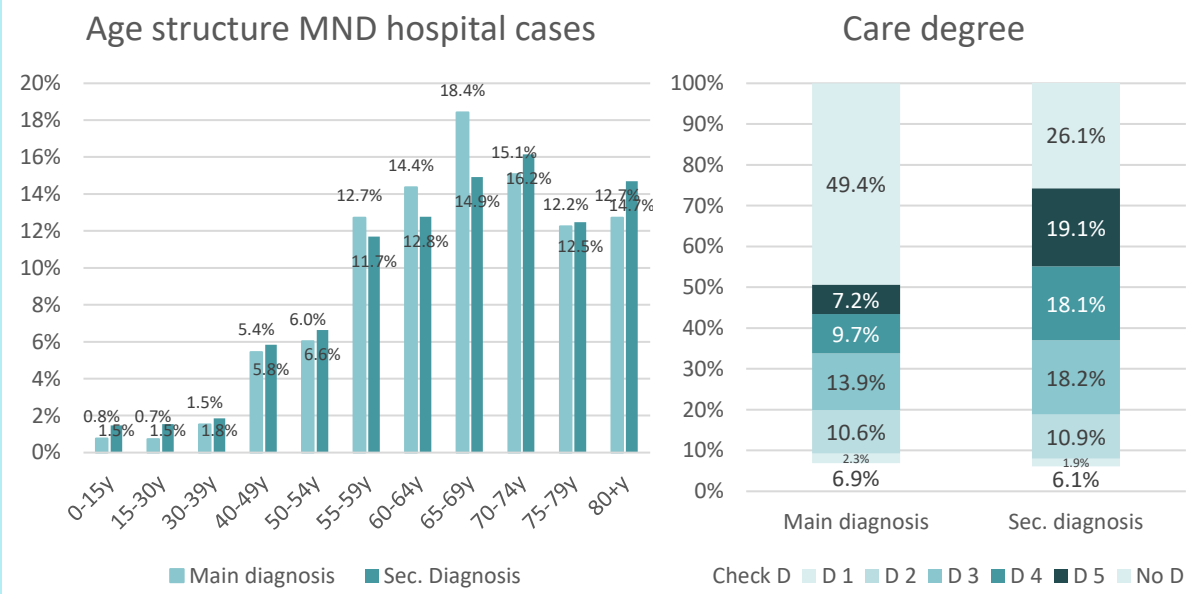
- Motor-neurone-diseases (MND) is a group of rare neurodegenerative disorders of the upper and lower motor neurons.
- They mainly progress rapidly, and usually lead to death within less than four years after diagnosis, mostly by respiratory failure.
- An incidence of MND of 2,200 and a prevalence of 7,200 cases in Germany is suggested by registry data, also, that patients undergo basically minimum three hospitalizations:
 - Firstly, for diagnosis-finding,
 - secondly for feeding-tube implementation, driven by bulbar-paralysis,
 - thirdly for initialization of ventilation.
- Here, inpatient data from German hospitals is analyzed for MND cases to prove discrimination of the three proposed hospitalizations and their accompanying costs.

Methods:

- Reports from 2010-2021 had been reviewed from:
 - German DRG-Institute (*Institut für das Entgeltsystem im Krankenhaus*, InEK)
 - German statistical office (*Statistisches Bundesamt*, DESTATIS)
 - German hospital quality reports by the joint federal committee (*Gemeinsamer Bundesausschuss*, G-BA)
- Data were analyzed for MND cases and treatment
- Analysis with Microsoft-Excel® Version 2019.

Results:

- 2021 were 10,711 MND-hospitalizations coded, thereof 5,625 (53%) main and 5,086 (47%) secondary diagnosis.
- Total DRG spending was €59,691,000 (€5,572 per case), thereof
 - €25,482,000 main diagnoses (€4,530 per case) and
 - €34,209,000 secondary diagnoses (€6,726 per case).
- Given the assumed prevalence, patients would stay annually in average 1.49 times in hospital with €8.290 hospitalization-costs.
- 59.7% of cases (35.5% of spending: €2,464 per case) were neurologic-DRGs, representing stays for diagnosis-finding and minor complications, including feeding-tube implantation.
- 1,023 feeding-tube-implantations had been found, suggesting the frequent implementation under hospital conditions.
- 15.3% of cases (7.1% spending: €1.927) are pulmonary-DRG without long term ventilation, representing late-stage disease.
- 14.0% of cases (45.5% spending: €13,491) are long term ventilation-DRG reflecting terminal stage of disease. In addition, the implantation of diaphragm-stimulators makes 0.9% of cases (4.5% spending: €20,005).
- 9.0% of cases (5.7% spending: €2,620) were other complications after diagnosis or unrelated diseases.
- 1.0% cases were rehabilitation measurements



Conclusions:

- The assumed three typical hospitalization-types could be detected in the billing-date: 1. diagnosis 2. bulbar symptoms 3. ventilation
- The late stage MND with pulmonary failure and long-term ventilation is most budget impacting
- It can be estimated that MND patients stay in average 1.5 times annually in hospital, 6-8 times during their disease
- In the later stage of the disease the hospitalizations are frequently due to indirect effects of the disease
- Further investigation of the patients pathway may be reasonable to possibly prevent avoidable hospitalizations