

# Home Mechanical Ventilation in Sweden

## Demography, Indications, Clinical Effects and Survival

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### Abstract

Home mechanical ventilation in patients with chronic respiratory failure secondary to several different diseases has become widely acceptable as the provision of ventilatory support can provide symptomatic relief and increase life expectancy.

*Aims:* To study the selection criteria underlying the initiation of home mechanical ventilation and to quantify the effects in relation to blood gases and lung function; to examine temporal changes in treatment prevalence in Sweden; to study survival and causes of death and demonstrate possible related impact factors.

*Methods:* Since January 1 1996 the nationwide Swedish Home Mechanical Ventilation Register prospectively has collected data on home ventilated patients. The studies founding this thesis are based on data from this register. In the neuromuscular patients (N=352) we examined symptoms, clinical signs and physiological findings that were motivating the initiation of treatment. We studied the clinical effects of home ventilation over time in patients with sufficient follow up data (N=288) regardless of the underlying diagnosis. We looked at the temporal changes and geographic inequalities in the prescription of home ventilation in Sweden. We examined survival data for a period of ten years in 1526 patients and in 337 deceased patients we studied the causes of death.

*Conclusions:* In hypercapnic patients daytime sleepiness may be an important motive for starting HMV. Blood gases during spontaneous ventilation improve after start of treatment. The numbers of patients on home ventilation continue to increase (especially Pickwickian patients) and there are evident inequalities in local prescription rates in Sweden. ALS patients show by far the poorest survival, in the non-ALS patients a number of patient related factors affected survival. The hazard for cardiovascular death appears to be more significant than previously reported especially in the Pickwickian patients.

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Universitet kommer att offentligen försvaras lördagen den 11 november 2006, kl. 10.00 i Segerfalksalen,  
Wallenbergs Neurocentrum, Sölvegatan 17, Lund. Språk: engelska.  
Fakultetsopponent: Professor Thorarinn Gislason, Landspítali, Reykjavik, Island.

Doctoral thesis which, by due permission of the Faculty of Medicine at Lund University, will be publicly

defended on Saturday 11 November 2006, at 10.00 a.m. in Segerfalksalen, Wallenbergs Neurocentrum, Sölvegatan 17, Lund.

Language: English.

Faculty opponent: Professor Thorarinn Gislason, Landspítali, Reykjavik, Iceland.