

Costs of Home Mechanical Ventilation and Oxygen Therapy in Russia: Real-World Data

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OBJECTIVES: The aim of the study was to assess the socio-economic burden of managing patients with chronic diseases accompanied by chronic respiratory failure (CRF) and requiring long-term home mechanical ventilation (non-invasive or invasive) and/or oxygen therapy in Russia.

METHODS: The work consisted of two parts: an observational study of real-world clinical practice (2021-2022) and, based on the data obtained, economic model for a long-term home ventilation. The first part of the work included 65 patients (mean age 61 years, proportion of men 56.9%, n=37) with diseases accompanied by CRF (COPD, obesity hypoventilation syndrome, congenital kyphoscoliosis, consequences of spinal injury, amyotrophic lateral sclerosis, lymphangioleiomyomatosis, histiocytosis, idiopathic pulmonary fibrosis, post-COVID syndrome, etc.), receiving different types of home ventilation during 9 months. The total economic burden associated with the management of patients requiring long-term home ventilation and/or oxygen therapy was determined as the sum of all types of analyzed direct (medical and non-medical) and indirect costs, the data for the calculation were collected based on medical records and patients' diaries (fig.1).

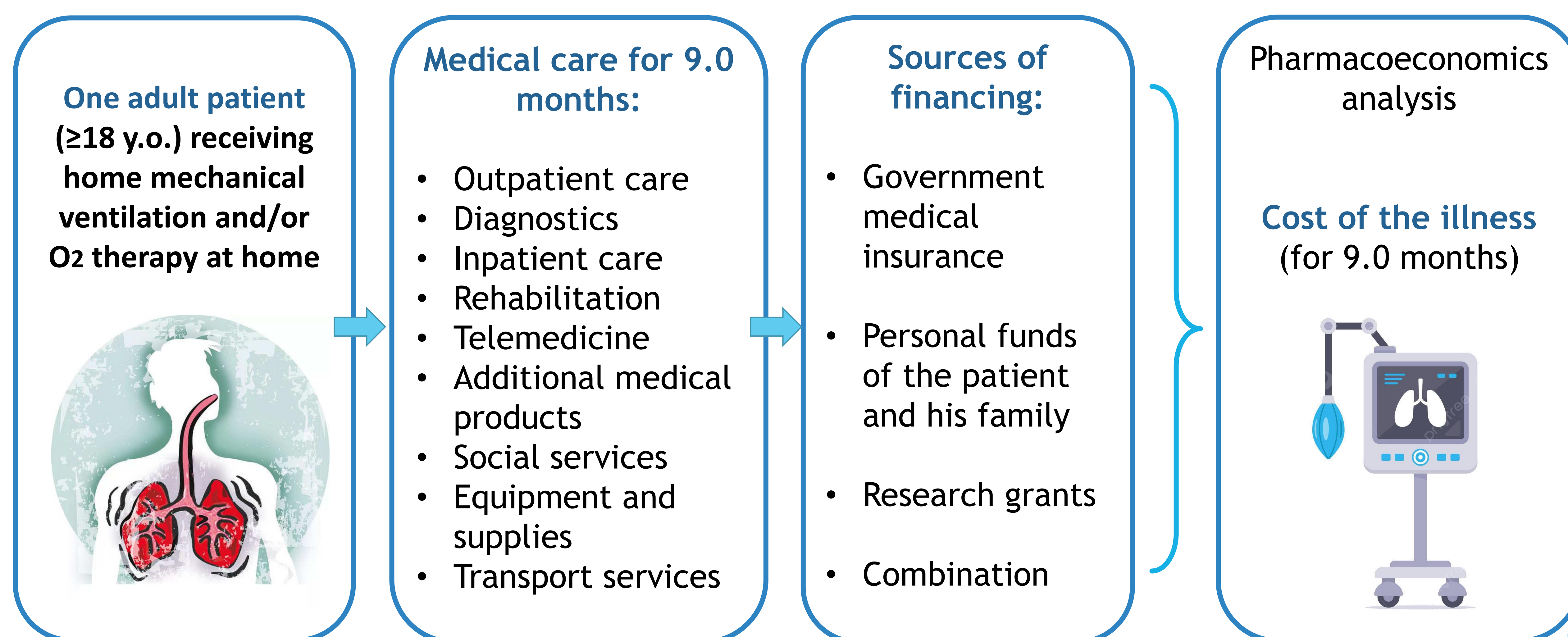


Figure 1. General characteristics of cost assessment for long-term home mechanical ventilation and/or oxygen therapy

RESULTS: The total costs for all included patients during 9 months amounted to €250,398.95 excluding the cost of necessary medical equipment and consumables for long-term home mechanical ventilation (non-invasive or invasive) and/or oxygen therapy. Direct medical expenses accounted for the largest share of costs (€ 176,373.99), direct non-medical costs amounted to €65,845.76, and indirect - €8,179.2. The weighted average costs per 1 patient with a chronic disease requiring long-term home mechanical ventilation and/or oxygen therapy amounted to €8,248.47 within 1 year, excluding the necessary medical equipment and consumables. Direct medical costs amount to €6,695.73, direct non-medical costs – € 1,382.69, indirect - €170.05 (rate for June 2023).

CONCLUSIONS: This analysis is the first experience in assessing the costs of long-term home mechanical ventilation and/or oxygen therapy in patients with various chronic diseases in real-world clinical practice in Russia, which demonstrates the high economic burden on the healthcare system, society and the patient.