Non-Invasive ventilation to reduce intubation and subsequent mortality but this guidance has been called into question with the development of oxygen enriched high-flow therapy (HFT). 

Coudry et al (Lancet Respir Med 2022;10:641) conducted the FLORALI-IM study (HFN/AC alone or associated with NIV for immunocompromised patients admitted to ICU for acute respiratory failure), a multicentre, open-label, randomised clinical trial conducted in the Danish ICU setting. 

Immunocompromised adults with acute hypoxic respiratory failure were considered eligible if they had a respiratory rate of more than 25 and PaO₂/FiO₂ ratio of ≤300mm Hg while spontaneously breathing on standard O₂. Patients with a low Glasgow coma scale, severe shock, CO₂ higher than 50mm Hg were excluded. The study randomised 300 patients to either NIV (n=146) or the HFT (n=154). A single patient withdrew from the NIV group and was excluded from the analysis. The NIV group, alternating treatment with HFT was allowed with the aim of 12 hours of NIV per day in 4-hour sessions. The primary outcome of the study was mortality at day 28 with longer-term mortality, intubation rates and length of stay as secondary outcomes. Mortality at day 28 was 36% in the HFT group compared with 35% in the NIV group (mean difference 1.2%, 95% CI ~9.6 to 11.9; p=0.83). The study was adequately designed and powered for a 15% absolute difference in mortality and so small differences between treatment arms cannot be excluded and may still be considered clinically significant. However, the study demonstrates that the choice of NIV or HFT in this patient population.

DOMICILIARY HFT IN COPD: POTENTIAL COST SAVING TO HOSPITAL SYSTEMS 

Chronic obstructive pulmonary disease (COPD) is a common progressive disease which is a common cause of hospital admissions with high associated costs. HFT delivers high flow humidified air to avoid oxygen enrichment and has been shown to reduce admissions with exacerbation of COPD when delivered at home in high-risk patients. Milne et al (J COPD 2022;17:1311) used data from a previous randomised clinical trial of HFT performed in Denmark on 200 patients (100 control, 100 HFT) with COPD requiring LTOT and performed budget impact based on the New Zealand hospital system with a 5-year horizon. Hospital admissions due to COPD exacerbation in the Danish study were compared with the admissions in Middlemore Hospital, NZ, using a matched cohort of 30 patients. Compared with the baseline of 12 months before the study, it was noted there was significant reduction in hospital admissions of 9% in the HFT group compared with a 7% rise in the control group. This study calculates the hospital admission costs for NZ with a linear regression analysis, which was estimated to be US$8699. Thereafter, keeping into account the device cost and the average usage, the projected hospital savings were $18025 per device over a 5-year period. The study demonstrates a potential cost saving by introduction of a new therapy in this group of patients with significant care burden with the health system.