Introduction:  
The use of nasal high flow (NHF) as a respiratory support therapy post-extubation has become increasingly more common. NHF has been shown to be non-inferior to NIV and reduces escalation needs compared to conventional oxygen therapy. Clinical outcomes using NHF in patients with Type II Respiratory Failure (RF) is less well understood. Our aim was to determine if NHF can be used successfully when extubating Type II RF patients compared to Type I RF.

Methods:  
We conducted a retrospective observational study on the use of NHF as an extubation respiratory support in 56 (n=56) consecutive patients in ICU over a 12-month period. Primary outcome was the need for escalation in therapy (NIV, Intubation and Palliation) post extubation. Patients were categorised as high risk if they scored ≥1 from: Age≥75 years, BMI≥30 and ≥1 medical comorbidity.

Results:  
Analysis was conducted on all fifty-six (n=56) patients. Type I RF group was composed of 25 (n=25) patients with a mean age of 62.7 (±SD) years. Type II RF group had 31 (n=31) patients with a mean age of 65.5 (±SD) years. In Type I RF 22 patients (88%) were successfully extubated with NHF compared to 21 patients (67.7%) in Type II. In Type II RF the outcomes were more variable with a greater requirement for NIV. Of these patients 16% required NIV, 3.2% required intubation and 12.9% received NHF therapy for palliation. A higher average BMI (30.32 vs 27.16 kg/m2) was found in unsuccessfully vs successfully extubated patients in Type II RF. In Type I RF escalation of therapy was equally distributed with 4% in each category.

Conclusion:  
The use of NHF for respiratory support post-extubation may become standard practice for Type I RF in critical care settings. Our data suggests that NHF can be used but with caution in Type II RF and clinicians should risk stratify patients to identify those at risk of re-intubation and post-extubation respiratory failure.