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### CHANGES IN PRESCRIPTION OF HOME NON-INVASIVE VENTILATION (NIV) IN SOUTHERN ADELAIDE LOCAL HEALTH NETWORK (SALHN) FROM 2016 – 2020

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**Background:** Long term NIV is established therapy for patients with chronic type 2 respiratory failure (T2RF) due to neuromuscular disorders and obesity hypoventilation syndrome (OHS) without significant OSA. There is emerging evidence that COPD patients with T2RF also benefit from NIV. In our centre, there appears to be an increase in the prescription of long term NIV to patients over time, with 60% of all active long term NIV patients commencing therapy from 2017 onwards. In this study we will determine if (i) there has been increased provision of long term NIV to ward patients recovering from acute T2RF, (ii) there has been an increase in patients with COPD and T2RF commenced on long term NIV, (iii) there are patients with OHS and comorbid OSA who can be changed from NIV to CPAP and

(iv) there is adequate follow up for patients who initiated NIV in the ward acutely.

**Methods:** Retrospective, observational study using a pre-existing database of all current and previous patients commenced on NIV from July 2016 to July 2020.

Progress to date

All active long term NIV patients have been identified and a database (n= 220) created containing all relevant information including date and place of NIV initiation and indication.

Intended outcome and impact

This audit will objectively assess the growth of our NIV service to facilitate better allocation of resources. It will also determine if our commencement and management of those on long term NIV is aligned with current evidence and best practice guidelines.

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### THE PREVALENCE OF SELF-REPORTED SLEEP DIFFICULTIES IN WIND FARM NOISE, URBAN ROAD TRAFFIC NOISE AND QUIET RURAL EXPOSURE AREAS IN SOUTH AUSTRALIA.

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**Introduction:** The prevalence of sleep difficulties from wind farm noise (WFN) compared to road traffic noise (RTN) or other sources is unknown. This study investigated the prevalence, severity and source of sleep difficulties in WFN, RTN and quiet rural exposure areas.

**Methods:** Geographic sampling and computer assisted telephone interviews were used to evaluate sleep difficulties (falling or staying asleep, waking too early, or feeling unrefreshed) attributed to RTN, WFN or non-WFN and RTN related factors using 0–4 scales (none, mild, moderate, severe, very severe). Three groups were sampled; WFN exposed (n=38–84 in five 2 km bands <10 km from a wind farm; total 372), RTN exposed (n=87 <800 m from a busy road >50,000 vehicles/day) and quiet rural controls (n=83). Preliminary prevalence estimates and odds of moderate-to-very severe sleep difficulties attributed to RTN, WFN or other sources were evaluated.

**Results:** Few WFN exposed respondents attributed sleep difficulties to WFN (0.8%) compared to moderate-to-very severe difficulties from RTN (2.2%) or other sources (16.1%). Sleep difficulties were higher in RTN exposed (17.2%) compared to quiet (6% OR[95%CI] 4.1[1.3–13.0]) or WFN exposed (OR[95%CI] 9.5[3.9–23.3]) rural areas. Sleep difficulties attributed to other sources were not different between groups (Chi<sup>2</sup> p=0.054), but tended to be higher in urban RTN exposed residents (26.4%).

**Conclusions:** Preliminary findings do not support more prevalent sleep difficulties in WFN compared to RTN exposed or quiet rural area residents. Given low rates of WFN-attributed sleep difficulties, larger and/or more sensitive studies remain warranted to further clarify potential WFN effects on sleep.