Bridging the Gap: Hospital-to-Home Polysomnography with Nox A1s

The demand for high-fidelity sleep data is outstripping in-lab capacity, leading to prohibitive wait times.[1] **The Nox SAS solution using the Nox A1s PSG System** provides a revolutionary way to simplify PSG testing: a less complex, portable system that delivers high quality signals which, when manually scored, show high levels of agreement with Level 1 PSG scoring of sleep stages.[2]

Meeting the "Gold Standard" Requirements

The Nox SAS solution using Nox A1s is designed to meet the rigorous guidelines set by the American Academy of Sleep Medicine (AASM)[4] and similar guidelines for Level 2 unattended studies:[1]

Feature	AASM Level 2 Requirement	Included in Nox A1s Level 2 studies
Channel Count	≥7 channels (EEG, EOG, EMG, ECG, Airflow, Effort, SpO_2)	Meets requirements
Sleep Staging	Required (EEG, EOG, EMG)	Full PSG-based sleep staging supported (EEG, EOG, EMG via Nox A1s system when configured for SAS studies)
Respiratory	Airflow, Effort, SaO_2	Pressure sensors, RIP belts, Wireless Pulse Oximetry
Cardiac	ECG/Heart Rate	Single lead modified Lead II
Position	Body position monitoring	Integrated 3D acceleration sensor

Reaching More Patients Where They Are:
Clinical Implications & Resource Optimization

Level 2 in-home PSG offers the best of both worlds. It expands access beyond the limits of in-lab capacity, better supports patients who are reluctant or unable to sleep in a lab, and reduces the time staff spend on setup and cleanup. The result is a more comfortable experience for patients and a more efficient workflow for staff.

- **Wait-Time Reduction:** Transitioning patients to Level 2 home studies frees up in-lab beds for more complex titration or neuro-sleep cases.
- **Efficiency:** The "free-to-move" wireless design reduces setup time for PSG hookup in lab or at home to 15-20 minutes.
- **Data Integrity:** A research study of the Nox SAS found that successful and reliable recordings were collected from approximately 85% of the 960 participants on the first attempt, and 88.6% overall after two attempts. The study also demonstrated that the EEG and EOG signals could be acquired without significant artifact.[5]

Versatile Hardware for Diverse Clinical Needs

The Nox A1s is a single hardware solution for Level I and II testing.

- **Traditional EEG:** Supports standard scalp electrode placement for full sleep architecture and arousals monitoring.
- **Nox SAS (Simplified Polysomnography):** An innovative forehead-based setup designed for rapid hookup and high patient compliance, eliminating the need for scalp electrodes and chin EMG while still recording EEG/EOG and facial EMG.

Find out how to get the precision of the sleep lab – everywhere. Talk to Nox about the SAS for full PSG studies in both lab and home settings.

Reference Verification: * AASM Manual V3 is the guiding clinical framework.[4] Where applicable, local national guidelines (e.g., ERS, ESRS, AASM) should also be consulted.

References

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3. Punjabi NM, Kaplan PW, Margolick J, Aurora RN. 0319 A Simplified Bipolar Frontal Montage for Recording and Staging Sleep. Sleep. 2018;41:A122-A122. doi:10.1093/sleep/zsy061.318 2
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5. Punjabi NM, Brown T, Aurora RN, Patel SR, Stosor V, Cho JH, Helgadóttir H, Ágústsson JS, D'Souza G, Margolick JB. Methods for home-based self-applied polysomnography: the Multicenter AIDS Cohort Study. Sleep Adv. 2022 Apr 29;3(1):zpac011. doi: 10.1093/sleepadvances/zpac011. PMID: 35601080; PMCID: PMC9119085.

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