Retrospective adherence data was collected from patients prior to remote monitoring.

**Results** Post establishment, initial data (3 patients) showed variable overnight adherence with mean use 38 minutes, 47 minutes and 7 hours 26 minutes respectively. Following the first phone contact with the parents, a personalized plan was agreed and arranged. The aim of each plan addressed issues such as adjusting/changing the mask interface, humidification and parental encouragement. Further scheduled contacts will occur on a personalized basis. Parents will receive a satisfaction questionnaire at the end of the monitoring period.

**Discussion** Remote monitoring technology has the potential to guide adjustments in NIPAPT therapy, monitor and improve adherence and reduce financial burden of hospital based review. Our preliminary work shows high uptake. We await results of the patient satisfaction questionnaire and cost breakdown following pilot study completion.

We developed a sensitive method to detect and quantify RMs using automatic 3D video analysis.

**Method** Children with RMD (n=6, 4 male) aged 5–14 years were studied for two nights in a sleep laboratory. A ceiling-mounted camera captured 3D depth images, while another recorded 2D video, from lights off until lights on. We developed algorithms to analyze the characteristics of RMs and built a classifier to distinguish rhythmic from non-rhythmic movements based on 3D video data alone. Data from 3D automated analysis were compared to manual 2D video annotations in 1.5s segments to assess algorithm performance [figure 1]. Novel indices were developed: the RM index, frequency index and duration index to better characterize RMD severity.

**Result** Automatic 3D analysis demonstrated high levels of agreement with the manual approach (Cohen’s Kappa >0.9; F1-score >0.9). We also demonstrated how RM assessment can be improved using plots of our novel indices for ease of visualization.

**Conclusion** 3D video technology is widely available and can be integrated into sleep laboratories. Our automatic 3D video analysis algorithm yields reliable quantitative measurement of RMs, reducing the burden of manual scoring. Furthermore, our novel RMD severity indices offer standardized measures of utility to clinical and research practice.