

available resources. As such the team are investigating using an electronic sleep diary, integrating with actigraphy and simplifying the whole process. The first stage of this process was to ask the stakeholders their opinions of sleep diaries and actigraphy.

**Methods** Stakeholders were asked about sleep diaries and actigraphy considering all aspects of the process from when to request a referral and organising collection, completing a diary and wearing actigraphy, through to analysing and interpreting results. Questions asked were appropriate to the different stakeholder groups involved. Families and local hospital staff were interviewed and British Paediatric Sleep Society (BPSA) members and families undergoing actigraphy were sent appropriate brief questionnaires relevant to their part of the pathway [Service evaluation SE1347].

**Results** 47 stakeholders provided feedback. Interviews were conducted with 14 staff, 9 parents and 3 young people. Additional questionnaires were completed by 8 families undergoing actigraphy and 13 BPSA responders. A summary of the most common responses is shown in table 1. Most institutions were issuing sleep diaries and actigraphy to specific patient groups due to limited resources.

**Discussion** This stakeholder engagement provides useful information to improve the use of sleep diaries and actigraphy within our paediatric clinical setting. If the process can be simplified then more sleep diary and actigraphy usage can occur at the triage stage of the sleep referral process and prevent unnecessary sleep studies, benefitting both families and limited resources. Feedback received confirms the current solution for paediatric sleep diaries and actigraphy is not ideal and there is a need to identify new approaches to increase usability, acceptability and stakeholder's satisfaction.

#### P015 SLEEP-RELATED PROBLEMS IN CHILDREN WITH OSTEOGENESIS IMPERFECTA

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**Introduction** Osteogenesis Imperfecta (OI) is a genetic disorder affecting 1 in 10,000 births with a wide variability in phenotypes. Clinical manifestations include; recurrent fractures, bone pain, varying degrees of short stature and deformity, scoliosis, kyphosis, and respiratory failure in the severest types.

Sleep disorders are often under-acknowledged and are frequently more problematic in children with chronic illnesses. Children with OI are likely to complain of poor sleep quality due to pain, night sweats, structural changes in the chest and spine restricting the lungs, and soft tissues changes leading to decreased muscle tone, which may be linked to obstructive sleep apnoea.

The aim of the current project was to examine whether sleep-related problems are a significant issue to patients with OI at Sheffield Children's Hospital.

**Methods** A convenience sample of children with OI and their carers completed questionnaires designed by the project team to capture sleep and respiratory-related problems [service evaluation SE1090].

**Results** 55 patients (26 female; mean age 12.77yrs; range 3.1–17.3) and carers completed the questionnaires during routine admission or clinic appointment. Participants were classified by OI type; 32-mild, 13-moderate, 10-severe.

67% reported difficulty in getting off to sleep. 36% of participants reported waking in the night, with discomfort (44%) and feeling too hot (36%) being the most common causes. Frequency of night time waking ranged from 0–4 times a night. 27% of participants reported snoring.

**Discussion** This service evaluation highlighted that OI patients are reporting sleep-related issues and further focus on sleep in the clinical history may be of importance. A pilot study examining the feasibility of polysomnography and sleep-related questionnaires in children with OI is currently underway to further research sleep in this cohort.

#### P016 USING NON-INVASIVE THERMAL IMAGING FOR APNOEA DETECTION

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**Introduction** The current gold standard sensors to measure airflow in apnoea and hypopnoea detection are the oronasal thermal airflow sensor and the nasal pressure transducer, respectively.<sup>1</sup> Due to the contact nature of these sensors in the nasal region, they are poorly tolerated by children. In a recent audit, we found that 50% of children refused the nasal pressure sensor due to its invasiveness, and of those that

N	Males			Females		
	Elementary (Parent-report)	Intermediate (Self-report)	Secondary (Self-report)	Elementary (Parent-report)	Intermediate (Self-report)	Secondary (Self-report)
	50	39	50	50	50	50
Mean age	10	14	16	10	14	16
Mean score CSHQ	48	53	48	49	55	54
Percentage of sleep difficulties Score of 41 or above	86%	95%	86%	86%	100%	100%
Average sleep time	9 pm	11 pm	11 pm	10 pm	11 pm	11 pm
Average wakeup time	6 am	6 am	6 am	5 am	5 am	5 am
Average sleep duration	9	7	7	7	6	6

Abstract P016 Figure 1 Sample characteristics and the CSHQ scores