Driscoll Health Plan
Medical Necessity Guideline

Medical Necessity Guideline: Pediatric Sleep Study (Polysomnography) and Home Sleep Study	**Creation Date:** 09/01/2007	**Review Date:** 05/30/2023	**Effective Date:** 01/18/2022

PURPOSE:

To detail the authorization requirements for Pediatric Sleep Studies (Polysomnography) and Home Sleep Study.

DEFINITIONS:

Polysomnography (PSG): typically consists of an all-night recording performed in the sleep laboratory to characterize sleep architecture and sleep pathology.

Several physiologic parameters are measured, including sleep stages (characterized using a combination of **electroencephalography [EEG]**, eye movements, and muscle tone), respiratory function (including airflow at the nose and mouth, respiratory movements of the chest and abdomen, and oximetry), electrocardiogram, limb movements, a microphone to detect sounds such as snoring or vocalizations, and video recording to characterize movements or behaviors during sleep. (1)

GUIDELINE:

Sleep Studies, polysomnography, and actigraphy are benefits under Texas Medicaid with Pediatric contingencies. (2)

Driscoll Health Plan accepts Pediatric Sleep Study (under age 18 years) requests from board-certified or board-eligible physicians when clinical conditions and clinical documentation support medical necessity.

Respiratory Indications for Polysomnography in Children (17,18)

- Loud or noisy breathing (snoring) at night
- Witnessed apnea (e.g., central apnea, periodic breathing, or central hypoventilation)
- Fragmented sleep and daytime fatigue
- Daytime neurobehavioral problems attributable to disordered sleep
- Children in a particular population:
    - Trisomy 21
    - Obesity
    - Prader-Willi syndrome
    - Craniofacial abnormality, including macroglossia, micrognathia, or retrognathia (e.g., Pierre Robin sequence; severe rheumatoid arthritis with acquired retrognathia)
    - Patients with Arnold Chiari I malformation and myelomeningocele
    - Children with lysosomal storage disorders
    - Achondroplasia

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  - Children with neuromuscular disorders (e.g., Duchenne muscular dystrophy and spinal muscular atrophy)
- Requirement of nighttime ventilatory support
- Suspected ROHHAD (rapid onset obesity, hypothalamic dysregulation, hypoventilation, and autonomic dysregulation) syndrome

Non-respiratory Indications for Polysomnography in Children [17,18]

- Bariatric surgical evaluation (e.g., Gastric Sleeve, etc.)
- Parasomnia with suspected OSA (Obstructive Sleep Apnea)
- Hypersomnia when combined with MSLT (Multiple Sleep Apnea Test)
- Seizure evaluation [3,4,5,6]
- GERD/Aspiration [3,4,5,6]

Facility Requirements

- Sleep facilities that perform services for Medicaid clients must be accredited with the American Academy of Sleep Medicine (AASM), or the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Documentation of accreditation must be maintained in the facility and be available for review. Sleep facilities that perform services for Medicaid clients must also follow current AASM practice parameters and clinical guidelines. The procedure should be a Level 1 monitored study.

Home Sleep Study

Home sleep study tests are unattended studies performed in the client's home using a portable monitoring device to diagnose OSA. The portable monitoring device must meet American Academy of Sleep Medicine (AASM) practice parameters and clinical guidelines. A Home Sleep Study is a benefit in Texas Medicaid when the client is 18 years of age or older and when it is done in conjunction with a comprehensive sleep evaluation that has been performed by a physician who is board-certified or board-eligible, as outlined in the AASM guidelines. [7]

The standard of care for diagnosing OSA in children is in-laboratory PSG. [8] There is insufficient evidence to support that home sleep studies are diagnostically accurate or change the outcomes or management of OSA in the pediatric population. Therefore, home sleep studies are clinically inappropriate for assessing OSA in children under 18 years of age. [9]

Required documentation

1. Comprehensive sleep evaluation indicating the probability that member has moderate to severe OSA to support medical necessity.
2. Clinical notes documenting findings, frequency, severity, referrals related to this condition.

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BACKGROUND:

Evaluation of children with suspected sleep disorders begins with and is based primarily on a thorough history. In appropriate cases, the diagnostic process includes polysomnography (PSG) performance, most commonly for the characterization of breathing during sleep. The data indicate particularly strong clinical utility in children with suspected sleep-related breathing disorders and obesity, evolving metabolic syndrome, neurological, neurodevelopmental, or genetic disorders, and children with craniofacial syndromes. Specific consideration was given to the clinical utility of polysomnography before adenotonsillectomy (T&A) for confirmation of obstructive sleep apnea syndrome. The most relevant findings include: (1) recognition that clinical history and examination are often poor predictors of respiratory polygraphic findings, (2) preoperative polysomnography helps predict risk for perioperative complications, and (3) preoperative polysomnography is often helpful in predicting the persistence of obstructive sleep apnea syndrome in patients after T&A. (10)

A comprehensive literature search identified eight poor to fair quality studies that met the criteria for review. (10-17) The available studies evaluated portable monitoring devices for evaluation of OSAS or SDB in 1665 children, with sample sizes varying from 12 to 907 participants. Four studies were cohort studies, three were cross-sectional studies, and one was a longitudinal study. Six studies evaluated portable cardiorespiratory recording devices, and three assessed oximetry to diagnose obstructive sleep apnea syndrome (OSAS) or sleep-disordered breathing (SDB). Table 1 contains a summary detail of performance parameters for portable monitoring devices used to diagnose OSAS. Most children selected for the studies were referred to a sleep laboratory due to suspected OSAS or a medical condition that put them at high risk for OSAS.

The diagnostic accuracy of home sleep testing for pediatric OSAS varied widely in the reviewed studies. Using PSG as a reference standard, the sensitivity of home sleep testing ranged from 43% to 100%, and the specificity ranged from 60% to 100%. The available studies provided no evidence regarding the impact of home sleep testing on patient management or long-term patient health. Home sleep testing is safe; the procedure is non-invasive, and no adverse events were reported in the reviewed studies. However, failure rates of the home sleep testing procedure were high when parents or caregivers were responsible for equipment setup.

Thus, there is a lack of evidence regarding the impact of home sleep studies on health outcomes or patient management. Furthermore, the evidence is sparse and inconsistent regarding the diagnostic accuracy of home sleep studies in the pediatric population, which does not allow for any predictions of impact on health outcomes. (9)

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Table 1. Sensitivity and Specificity of Portable Monitoring Devices Used for Diagnosis of OSAS in Children

Key: AHI (apnea-hypopnea index); MOAHI (mixed/obstructive apnea-hypopnea index); OAHI (obstructive apnea-hypopnea index); RDI (respiratory disturbance index)

	Respiratory Index	Cutoff Value(s)	Sensitivity	Specificity
Cardiorespiratory Devices				
Jacob et al. (1995)	AHI	AHI >1 AHI >3 AHI >5	100% 88% 100%	62% 77% 100%
Rosen et al. (2003)	AHI	AHI ≥5	88%	98%
Zucconi et al. (2003)	RDI	RDI >5 (w/ auto scoring) RDI >10 (w/ auto scoring) RDI >5 (w/ revised scoring) RDI >10 (w/ revised scoring)	78% 80% 89% 100%	0% 71% 0% 57%
Oximetry-Based Devices				
Brouillette et al. (2000)	MOAHI	MOAHI ≥1	43%	98%
Kirk et al. (2003)	AHI	AHI >5	67%	60%
Bannink et al. (2010)	OAHI	OAHI ≥1	67%	89%

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PROVIDER CLAIMS CODES:

CPT Codes:

		CPT		
95782	95783	95808	95810	95811
G0398	G0399	G0400		

Diagnosis Codes							
E6601	E662	F10182	F10282	F10982	F11182	F11282	F11982
F13182	F13282	F13982	F14182	F14282	F14982	F15182	F15282
F15982	F19182	F19282	F19982	F5101	F5102	F5103	F5104
F5105	F5109	F5111	F5112	F5113	F5119	F513	F514
F515	F518	F519	G120	G121	G1221	G128	G2581
G373	G4700	G4701	G4710	G4711	G4712	G4713	G4719
G4720	G4721	G4722	G4723	G4724	G4725	G4726	G4727
G4729	G4730	G4731	G4732	G4733	G4734	G4735	G4736
G4737	G4739	G47411	G47419	G47421	G47429	G4750	G4751
G4752	G4753	G4754	G4759	G4761	G4762	G4763	G4769
G478	G479	G7100	G7101	G7102	G7109	G712	G809
G8250	G901	G931	J353	J9610	J9611	J9612	N5201
N5202	N5203	N521	N5235	N5236	N5237	Q040	Q041
Q042	Q078	Q308	Q311	Q312	Q313	Q315	Q318
Q320	Q321	Q322	Q323	Q324	Q672	Q673	Q674
Q750	Q751	Q752	Q753	Q754	Q755	Q758	Q759
Q770	Q771	Q773	Q774	Q775	Q777	Q778	Q779
Q781	Q789	Q870	R0681	R0902			

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DOCUMENT HISTORY:

DHP Committee that Approved	***Review Approval Date (last 5 years)***					
Medical Director	11/21/2018	6/13/2019	6/22/2020	6/10/2021	1/18/2022 5/24/2022	05/30/2023
CMO	11/21/2018	6/13/2019	6/22/2020	6/10/2021	1/18/2022 6/7/2022	06/06/2023
Medical Policy Workgroup *Effective 2022*					6/7/2022	06/06/2023
Medical Management *Retired December 2020*	11/21/2018	6/13/2019	6/22/2020			
Utilization Management & Appeals *Effective January 2021*				6/10/2021	1/18/2022 6/21/2022	06/20/2023
Utilization Management Behavioral Health *Retired December 2020*	2/28/2019	8/22/2019	6/22/2020			

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Provider Advisory Committee (PAC) *Effective 2022*					3/11/2022 6/17/2022	06/09/2023
Clinical Management Committee *Effective March 2021*				6/17/2021	1/25/2022	07/20/2023
Quality Management *Retired 2020*	4/16/2019	12/17/2019	6/26/2020			
Executive Quality Committee *Effective 2021*				8/4/2021	3/29/2022 6/28/2022	07/25/2023

Document Owner	***Organization***	***Department***
Dr. Fred McCurdy, Medical Director	Driscoll Health Plan	Utilization Management

Review/Revision Date	***Review/Revision Information, etc.***
08/01/2014	No change
09/01/2015	No change
11/28/2016	No change
11/28/2017	No change
11/15/2018	Updated TMPPM
07/23/2019	Updated to include other indications, references, acceptable referral specialties, and include overnight cardiopulmonary observation as outlined in reference (4).
11/30/2019	Updated references and improved format, added maxillofacial surgeon to the exception list
05/11/2020	Updated language and references – conversion to format and list of codes.

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06/16/2020	Final signoff by Dr. Serrao, revised Documentation requirements
05/14/2021	Added new Up-to-date References; Update TMPPM; verify codes
1/13/2022	Home sleep studies added, references updated
05/24/2022	Reviewed, revised, references updated, final editing by Dr. Fred McCurdy
05/30/2023	Revised by Drs. Dan Doucet and Fred McCurdy, to PAC for review

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