Prior Authorization Review Panel
MCO Policy Submission

A separate copy of this form must accompany each policy submitted for review.
Policies submitted without this form will not be considered for review.

Plan: Keystone First	**Submission Date**: 1/2/2025
Policy Number: ccp.1537	**Effective Date:** 12/2023 **Revision Date:** November 1, 2024
Policy Name: Pediatric bed enclosures and sensory beds	

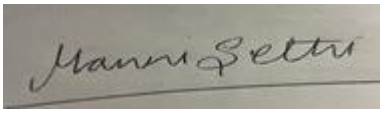
Type of Submission – Check all that apply:

- ☐ **New Policy**
- ☒ **Revised Policy***
- ☐ **Annual Review – No Revisions**
- ☐ **Statewide PDL**

***All revisions to the policy must be highlighted using track changes throughout the document.**

Please provide any clarifying information for the policy below:

See tracked changes below.

Name of Authorized Individual (Please type or print):	**Signature of Authorized Individual:**
Manni Sethi, MD, MBA, CHCQM	

Keystone First
Family of Health Plans

Pediatric bed enclosures and sensory beds

Clinical Policy ID: CCP.1537

Recent review date: 11/2024

Next review date: 3/2026

Policy contains:Autism; bed enclosure; Cubby Bed; insomnia; neurodevelopmental disorder; sensory bed; sleep disorder.

Keystone First has developed clinical policies to assist with making coverage determinations. Keystone First's clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of "medically necessary," and the specific facts of the particular situation are considered by Keystone First, on a case by case basis, when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. Keystone First's clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. Keystone First's clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, Keystone First will update its clinical policies as necessary. Keystone First's clinical policies are not guarantees of payment.

Coverage policy

A pediatric bed enclosure is clinically proven and, therefore, may be medically necessary to provide a safe and secure sleeping environment in the home for members who are at risk of falls, wandering, or self-harm (Harris, 2015; Sherburne, 2017).

A sensory bed (e.g., the Cubby Bed™ and Technology Hub [Cubby Beds, Denver, Colorado] and the zPod® [Zpods Holdings LLC, Saint Peters, Missouri] is investigational/not clinically proven and, therefore, not medically necessary.

Limitations

A pediatric bed enclosure is contraindicated in members who (Harris, 2015):

- Are violent, combative, self-destructive, suicidal, or claustrophobic.
- Have multiple intravenous lines, urinary catheters, or medical tubing.
- Become increasingly distressed after being placed in the bed.

Alternative covered services

- Cognitive behavioral therapy.
- Pharmacotherapy.
- Parental education.
- Door locks and door alarms (may be noncovered services).

Background

Neurodevelopmental disorders are a group of conditions caused by changes in early brain development that affect brain processing, resulting in impairments in personal, social, academic, or occupational functioning (American Psychiatric Association, 2022). Sleep disorders are common among people with neurodevelopmental disorders, which can severely impact the quality of life and sleep of the affected individual and their caregivers. Contributing factors include environmental influences, caregiver-related factors, and disease-related etiologies (Blackmer, 2016).

Among children with autism spectrum disorder, behavioral factors, such as inability to self-calm, communication impairment, sensory processing issues, circadian sleep–wake cycle abnormalities, and chemical and metabolic mechanisms may contribute to sleep disturbances. Children with autistic spectrum disorder, in particular, may have wandering tendencies (Johnson, 2024).

Neurodiverse children who are able to climb out of their beds are at risk of falls, wandering, and subsequent injury. A bed enclosure, also called a safety bed, canopy bed, or child-safe bed, is a fully enclosed canopy designed to prevent children from leaving their bed at night without supervision. A bed enclosure allows the patient to remain in a safe environment without the need for physical or chemical restraints, which may be detrimental to development, and offers the caregiver uninterrupted sleep and peace of mind.

A sensory bed combines a sensory-blocking bed enclosure with control of lighting, sound, vibration, and ambient temperature to create a comfortable, customizable, and relaxing sleep environment. Sensory beds may include motion sensors or cameras for remote monitoring and a control panel accessible from a smart phone or tablet. Examples include the Cubby Bed and Technology Hub and the zPod.

Findings

Therapeutic management of sleep disorders in neurodiverse children is based largely on clinical experience and small observational studies, limited by subjective outcomes and study design. Current guidelines and supportive evidence suggest cognitive behavioral therapy and melatonin appear to be the most effective interventions. There is insufficient evidence supporting the use of sensory beds to alter sensory stimuli as an effective treatment for sleep disturbances.

Guidelines

The American Academy of Neurology issued recommendations for treating sleep disturbances in children and adolescents with autism spectrum disorder. The strongest evidence supports the effectiveness of melatonin with or without cognitive behavioral therapy for improving multiple sleep outcomes compared with placebo. Evidence is insufficient to determine the effect of parental sleep-specific behavioral training. The guideline did not mention the use of sensory beds or sensory altering stimuli to improve sleep hygiene. The following recommendations received a Level B rating, meaning the recommendations were associated with confidence in the rationale and a favorable benefit-risk profile (Williams Buckley, 2020):

- There should be an assessment of coexisting medical conditions and concomitant medications that may contribute to sleep disturbance.
- First-line therapy is cognitive behavioral therapy to improve sleep hygiene.
- Pharmacologic therapy (melatonin) may be indicated if managing coexisting conditions and adopting behavioral strategies are unsuccessful.
- There is insufficient evidence to support the routine use of weighted blankets or specialized mattress technology for improving disrupted sleep, although weighted blankets appear safe and could be a reasonable nonpharmacologic approach for some individuals.

Evidence review

A summary of eight systematic reviews (38 total included studies) examined the efficacy of five interventions for treating sleep problems in children with autism spectrum disorder. Melatonin, behavioral interventions, and parent education/education programs appeared to be the most effective at ameliorating multiple domains of sleep problems compared with other interventions. There was insufficient evidence supporting pharmacologic treatments other than melatonin or alternative therapies (e.g., massage therapy, aromatherapy, and multivitamin and iron supplementation). The effect of polytherapeutic approaches requires further study (Cuomo, 2017).

For managing sleep disorders in children with neurodevelopmental disorders, the complexity of diagnosis and lack of high-quality evidence prevents a consistent approach to therapy. The initial approach should include evaluation and resolution of contributing or exacerbating factors of insomnia, including sleep hygiene, prior to initiating pharmacologic treatment. Iron supplementation, melatonin, and less common interventions (e.g., clonidine, gabapentin, hypnotics, trazodone, and atypical antipsychotics) may be prescribed. However, the heterogeneity of neurodevelopmental disorders and the lack of available data prevent determining the optimal choice of therapy. Ultimately, the medication with the least risk of toxicity and/or possibility of drug–drug interactions should be chosen (Blackmer, 2016; Johnson, 2024).

Pediatric bed enclosures

The evidence supporting the use of pediatric bed enclosures is limited to inpatients requiring some kind of restraint to ensure their safety. In one randomized controlled trial (n = 49 total), a bed enclosure was effective and more acceptable to relatives and providers than standard restraints, although there was no difference between groups in level of agitation, length of stay, time in restraints, or total dose of medication (Nawaz, 2007).

A retrospective chart review of 208 pediatric enclosure bed encounters in an acute care setting over a two-year period found children with new-onset cognitive impairment were more likely to incur falls, skin breakdown, and injury during use of the enclosure bed. However, an enclosure bed was reasonable for certain children to ensure their safety (Sherburne, 2017).

In one institution's experience with enclosure beds used for more than 200 inpatients, no patient falls or injuries occurred, and sitter expenses decreased. Enclosure beds were incorporated into some home care plans for patients with agitation secondary to dementia and for pediatric patients with significant chronic neurologic or behavioral problems as an option for fall prevention and patient safety. The main benefit of using an enclosure bed at home was giving caregivers a respite period from caring for the child by providing a safe environment (Harris, 2015).

The inpatient experience with bed enclosures offers some insight into appropriate use at home. To be considered for the enclosure bed, the patient must be at high risk for falling and must demonstrate one or more of the following characteristics: impulsiveness; agitation; inability or unwillingness to ask for assistance or respond to redirection; unsteady gait; or wandering behavior. An enclosure bed is contraindicated for (Harris, 2015):

- Patients who are violent, combative, self-destructive, suicidal, or claustrophobic.
- Patients with multiple intravenous lines or urinary catheters.
- Patients who become increasingly distressed after being placed in the bed.
- Patients with a history of falling alone.

In 2024, we updated the references with no policy changes warranted.

References

On September 6, 2024, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and

the Centers for Medicare & Medicaid Services. Search terms were “bed enclosure,” “autistic disorder (MeSH),” “behavior therapy (MeSH),” “music therapy,” “sound therapy,” “chromotherapy,” “escape,” and “autism.” We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

American Psychiatric Association. *Diagnostic and statistical manual of mental disorders, Fifth edition. Text revision (DSM-5-TR)*. Washington, DC: American Psychiatric Publishing; 2022.

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Sherburne E, Snethen JA, Kelber S. Safety profile of children in an enclosure bed. *Clin Nurse Spec.* 2017;31(1):36-44. Doi: 10.1097/NUR.0000000000000261.

Williams Buckley A, Hirtz D, Oskoui M, et al. Practice guideline: Treatment for insomnia and disrupted sleep behavior in children and adolescents with autism spectrum disorder: Report of the Guideline Development, Dissemination, and Implementation Subcommittee of the American Academy of Neurology. *Neurology*. 2020;94(9):392-404. Doi: 10.1212/wnl.0000000000009033.

Policy updates

11/2023: initial review date and clinical policy effective date: 12/2023

11/2024: Policy references updated.