MEDICAID EVIDENCE-BASED DECISIONS PROJECT

Medicaid Coverage of Enclosed Beds

Sources. Beds by George (above); Cubby Beds.

Enclosed beds, also known as safety beds, feature padded walls, mesh canopies with zippered door access, and other modifications to create safe sleep spaces and prevent climbing out of bed or seizure-related falls. These specialized devices are marketed as protecting patients from injury risks, and are often used by children with conditions such as autism spectrum disorder (ASD) or developmental disabilities.

State Medicaid programs noted increasing requests for these beds in recent years, which our literature review and key informant interviews link to rising ASD prevalence, pandemic-related sleep pattern disruptions, and increased marketing of these products through social media. However, evidence supporting the effectiveness of enclosed beds is extremely limited, posing challenges when determining medical necessity and appropriate use of medical equipment versus restraint or convenience devices. Patient safety, restraint prevention, access considerations, and inconsistent pricing and reimbursement policies are principal issues that Medicaid programs must consider.

Medicaid Evidence-based Decisions Project (MED) members in the durable medical equipment (DME) workgroup requested this tool to explain the benefits and risks of using enclosed beds for qualifying conditions and populations, summarize current medical necessity and coverage criteria across

Medicaid programs, and highlight any evidence gaps or policy considerations needed to guide decision making around claims and regulations. This tool is based on the MED report, *Enclosed Beds and Associated Technologies*,[1] which is available through the MED clearinghouse. Methods used for developing this tool can be found in Appendix A.

EVIDENCE FOR EFFECTIVENESS AND HARMS OF ENCLOSED BEDS

The evidence for the effectiveness and safety of enclosed beds is extremely limited. Only 1 tangentially relevant randomized controlled trial was identified, which found improved perception of enclosed beds compared with standard restraints among relatives and some hospital staff for adult patients, but no differences in agitation, length of stay, or medication use.[2] No studies on enclosed bed use in home settings or for children or youth were found. Due to this lack of evidence, clinical guidelines do not include enclosed beds in recommendations for managing sleep issues, wandering, or fall risks in people with neurodevelopmental disorders.[3-14] Instead, guidelines recommend behavioral therapy and melatonin for improving sleep, and using locks on doors or windows to prevent wandering.[14] Several systematic reviews emphasize the lack of evidence for most sleep interventions in these populations, with melatonin and behavioral approaches being the most studied.[15-20]

Given the limited research, Medicaid and commercial insurance policies on enclosed bed coverage largely cite other payer policies, FDA guidance on hospital bed safety, and in a few cases, the single RCT mentioned above.[21-25] Some policies also reference studies on general sleep issues in autism that do not specifically evaluate enclosed beds.[25-29] This highlights the overall scarcity of high-quality evidence to inform policy decisions regarding enclosed bed use and coverage.

ENCLOSED BED COVERAGE ACROSS MEDICAID PROGRAMS

Medicaid is the primary payer for enclosed beds in the US, with commercial payers a distant second, according to enclosed bed manufacturers Beds by George and Cubby.[30] Many children who need these beds come from low-income households or have medical conditions that qualify them for Medicaid waivers or programs.[30,31] Key coverage pathways include home and community-based waivers and the Katie Beckett option.[30,31]

Medical Necessity and Qualifying Conditions

Across the Medicaid and commercial policies reviewed, common qualifying conditions for enclosed beds are often traumatic brain injury, cerebral palsy, seizure disorders, developmental delays, and severe behavioral disorders.[22,23,32-36] Commercial plans often mirror Medicaid policies but may have additional qualifying conditions such as neurological disorders causing disorientation, vertigo, or uncontrolled movements.[37-39] While rarely listed as a qualifying condition,[22,23,32-39] ASD may fall under broader categories such as behavioral disorders or developmental disabilities.

Diagnosis alone does not guarantee qualification; patient assessment must demonstrate specific needs can be addressed by an enclosed bed.[22,23,32-36] Some Medicaid programs and commercial payers assess needs case-by-case without specifying diagnoses.[25,40-46] Other policies emphasize enclosed beds are not considered medically necessary for preventing injuries from seizure activity or self-injurious behaviors.[22,24]

A related ethical issue is that enclosed beds can be misused as a form of restraint.[30,40,47] This inappropriate use occurs when caregivers prioritize their own needs or preferences over the individual's autonomy.[47] Instead of addressing the underlying reasons for wandering behavior, some caregivers may resort to confining the person to prevent nighttime roaming.[30,40,47] This practice allows the caregiver to rest uninterrupted, but raises ethical concerns about restricting personal freedom and potentially exacerbating the child's distress.[30,40,47] We discuss state Medicaid program strategies to ensure enclosed beds are not used as restraints below.

Strategies to Avoid Use of Beds as Restraints

Medicaid programs emphasize that enclosed beds should not be used for[25,35,45,46]:

- Restraint
- Discipline
- Caregiver needs and preferences

Clinical criteria used by state Medicaid programs and commercial plans to deter inappropriate use[22-25,34,35,40,42,44-46,48]:

- Specific measures to prevent the use of enclosed beds as restraints
- Require proof of actual injury before approval
- Mandate that underlying behavioral conditions are addressed first
- Limit use to nighttime or short rest periods

Requiring design requirements to reduce isolation[25]:

- Slats for visual and auditory access

Challenges[30]:

- Difficulty monitoring home use
- Total prevention of misuse may not be possible

Adverse Events Associated With Enclosed Beds

Enclosed beds have been associated with various adverse events, with most involving material separation and structural integrity issues.[49-71] Notable incidents include ingestion of disassembled parts (Cubby beds),[69] falls due to rail malfunctions (Pedicraft),[53] patient entrapment, a fractured ankle (Beds by George),[70,71] and a possible broken finger caused by material separation (Posey beds).[58] Significantly, enclosed beds have been subject to 2 Class 1 recalls, which are the most serious type of recall issued when there is a reasonable probability that product use or exposure will cause serious injury or death.[72] The recalls were for Cubby beds in 2022 following a fatal entrapment incident, leading to enhanced safety instructions,[73] and Vail Products in 2005 due to multiple entrapments resulting in severe injuries or death, ultimately leading to the cessation of manufacturing.[74-76]

REIMBURSEMENT POLICIES FOR ENCLOSED BEDS

Coding

The Centers for Medicare & Medicaid Services (CMS) has assigned Healthcare Common Procedure Coding System (HCPCS) code E0316 for safety enclosure frames or canopies used with hospital beds.[77] However, no specific HCPCS codes exist for standalone enclosed beds.[77] State Medicaid programs often use codes E0328, E0329, and E1399 for reimbursement.[40,41,78] Georgia Medicaid created a modified E0328 code (E0328 U1) to better identify and reimburse standalone enclosed beds.[41]

Efforts to Obtain a Unique HCPCS Code

The industry currently is working to strengthen evidence of medical necessity for enclosed beds to obtain a unique HCPCS code.[30] The CEO of Cubby beds, arguing current codes are inadequate, initiated a qualitative study with caregivers and clinicians, a systematic literature review, and a health economics and outcomes research study to persuade CMS to create a HCPCS code for enclosed beds.[30]

Source. Beds By George.

Reimbursement Strategies

The costs for enclosed beds range from $3,789 to $19,438, with potential additional markups by DME suppliers.[77,79,80] Medicaid reimbursement strategies vary across states. Georgia Medicaid's modified E0328 U1 code sets reimbursement limits at the lesser of the manufacturer's suggested retail price (MSRP), invoice price, or a combined maximum of $8,581.60 (complete bed $7,735.20 plus a 4-side, high-density foam cover at $846.40).[41] Minnesota uses a methodology of MSRP minus 20% or invoice plus 20%, while Massachusetts Medicaid pays actual acquisition cost plus 30%.[24] Uniquely, Massachusetts Medicaid code K0739 reimburses for labor costs

to install enclosed beds in an enrollee's home at $46.33 per hour.[48] This approach ensures Medicaid recipients can access these beds by covering both the cost of the beds and the installation.[30]

CONCLUSION

The use of enclosed pediatric beds for children with conditions such as ASD or developmental disabilities presents a policy challenge. Despite growing demand, there is limited evidence on the clinical effectiveness and safety of these beds. The single randomized controlled trial conducted in a hospitalized adult population, suggests enclosed beds may be perceived as a humane and safe restraint alternative. The lack of robust evidence in pediatric settings and absence of cost-outcome data represent significant knowledge gaps.

Some Medicaid programs have begun to respond to the increasing requests for enclosed beds through rigorous prior authorization processes. These processes aim to confirm medical necessity and prevent inappropriate use; however, the scarcity of evidence makes it challenging to assess claims effectively. Key issues are poor documentation quality and difficulty differentiating between behavioral and medical needs.

The rising demand for enclosed beds, particularly for children with ASD, appears to be driven by increased ASD prevalence, pandemic-related sleep disruptions, and manufacturer marketing. This underscores the need for more studies to track outcomes and adverse events following prescription.

State Medicaid programs may want to consider:

- Implementing enclosed bed tracking programs to gather real-world data on outcomes and adverse events.
- Developing standardized submission checklists and increasing reviewer training to improve consistency in the review process.
- Consider having either in-house or external clinician review claims for enclosed beds and their accessories like the technology hub used for Cubby beds.
- Reviewing denial rates and reasons to identify potential gaps in medical necessity criteria.
- Producing clear policies on accessory coverage to streamline the review process.
- Systematically tracking patient outcomes and use patterns.
- Considering reimbursement for ancillary costs such as delivery and installation labor.

As requests for enclosed beds continue to increase, more data is needed to guide evidence-based policymaking. Future research should prioritize safety considerations and focus on distinguishing between medical necessity and convenience use. Clinicians, caregivers, and payers should all be invested in optimizing other means of assuring safety and optimal sleep patterns. By addressing these challenges, policymakers can ensure that children who truly need these specialized beds can access them, while also safeguarding against potential misuse or harm.

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APPENDIX A

Methods

To identify evidence on enclosed bed benefits, harms, and policies, researchers from the Center for Evidence-based Policy (Center) conducted searches of Ovid MEDLINE, and the Cochrane Library. Studies included for evidence were assessed for risk of bias. We reviewed published payer policies from 12 state Medicaid programs (California, Georgia, Illinois, Indiana, Iowa, Massachusetts, Michigan, Minnesota, North Carolina, Rhode Island, Texas, and Vermont) and commercial policies published by Aetna, Anthem, CareSource, Centene, Cigna, Driscoll Health Plan, Highmark, Humana, Molina, Priority Health, and UnitedHealthcare. We also summarized adverse event data from the US Food and Drug Administration (FDA) Manufacturer and User Facility Device Experience (MAUDE) database between 2018–2023.

Suggested citation:

Dickson V, Vintro A, King VJ, Evans A. *Medicaid coverage of enclosed beds*. Portland, OR: Center for Evidence-based Policy, Oregon Health & Science University; 2024.

Conflict of interest disclosure:

No authors have conflicts of interest to disclose. All authors have completed and submitted the Oregon Health & Science University form for Disclosure of Potential Conflicts of Interest, and none were reported.

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The Center for Evidence-based Policy (Center) is recognized as a national leader in evidence-based decision making and policy design. The Center understands the needs of policymakers and supports public organizations by providing reliable information to guide decisions, maximize existing resources, improve health outcomes, and reduce unnecessary costs. The Center specializes in ensuring that diverse and relevant perspectives are considered and appropriate resources are leveraged to strategically address complex policy issues with high-quality evidence and collaboration. The Center is based at Oregon Health & Science University in Portland, Oregon.

centerforevidencebasedpolicy.org

Center for Evidence-based Policy

3030 S Moody Avenue, Suite 250
Portland, OR 97201

Phone: (503) 494-2182
Fax: (503) 494-3807

centerforevidencebasedpolicy.org