Medical Policy

Hemangioma and Vascular Malformation Laser Treatment

MEDICAL POLICY NUMBER: 62

Effective Date: 3/1/2024

Last Review Date: 2/2024

Next Annual Review: 2/2025

INSTRUCTIONS FOR USE: Company Medical Policies serve as guidance for the administration of plan benefits. Medical policies do not constitute medical advice nor a guarantee of coverage. Company Medical Policies are reviewed annually and are based upon published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last policy update. The Company reserves the right to determine the application of medical policies and make revisions to medical policies at any time. The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and Company Medical Policy will be resolved in favor of the coverage agreement. Coverage decisions are made on the basis of individualized determinations of medical necessity and the experimental or investigational character of the treatment in the individual case. In cases where medical necessity is not established by policy for specific treatment modalities, evidence not previously considered regarding the efficacy of the modality that is presented shall be given consideration to determine if the policy represents current standards of care.

SCOPE: Providence Health Plan, Providence Health Assurance, and Providence Plan Partners as applicable (referred to individually as “Company” and collectively as “Companies”).

PLAN PRODUCT AND BENEFIT APPLICATION

☒ **Commercial** ☐ **Medicaid/OHP*** ☐ **Medicare****

*Medicaid/OHP Members

Oregon: Services requested for Oregon Health Plan (OHP) members follow the OHP Prioritized List and Oregon Administrative Rules (OARs) as the primary resource for coverage determinations. Medical policy criteria below may be applied when there are no criteria available in the OARs and the OHP Prioritized List.

Notice to Medicaid Policy Readers: For comprehensive rules and guidelines pertaining to this policy, readers are advised to consult the Oregon Health Authority. It is essential to ensure full understanding and compliance with the state's regulations and directives. Please refer to OHA's prioritized list for the following coverage guidelines:

Hemangiomas: Guideline Note 13

**Medicare Members

Note that investigational services are considered **"not medically necessary"** for Medicare members.

COVERAGE CRITERIA

Note: For the treatment of hypertrophic or keloid scars caused by accidental injury, burns, or a prior surgical procedure, see the separate Cosmetic and Reconstructive Procedures medical policy (see Policy Cross References below).

I. Laser therapy for port wine stains and other vascular lesions of the skin may be considered **medically necessary** when **one or more** of the following (A-C) criteria are met:

   A. Documented evidence of functional impairment (e.g. eating or swallowing difficulty); **or**
   B. Lesion results in any of the following:
      1. Bleeding
      2. Ulceration
      3. Repeated infection; **or**
   C. Port wine lesions located on the face or neck.

II. Laser therapy is considered **cosmetic** as a treatment of port wine stains and other vascular lesions of the skin when the above criteria I. are not met.

Link to Evidence Summary

POLICY CROSS REFERENCES

- Cosmetic and Reconstructive Procedures, MP98

The full Company portfolio of current Medical Policies is available online and can be accessed here.

POLICY GUIDELINES

BACKGROUND

Hemangiomas

Hemangiomas are benign tumors made up of blood vessels. They can be found anywhere on the body, but commonly appear on the face, scalp, chest, or back. Hemangiomas rarely become malignant and usually fade and shrink over time, and therefore they are not commonly treated. Some may treat hemangiomas when the tumor interferes with vision, breathing, or may potentially cause disfigurement. Treatment may involve beta blockers, steroids, compression, embolization, and laser treatment.[1]

Port Wine Stains (PWS)

Port wine stains (nevus flammeus) are capillary malformations occurring from vascular anomalies that cause discoloration of the skin.[2] Present at birth, port wine stains (PWS) are most commonly singular in occurrence. They are distinct from infantile hemangiomas. Rarely, they occur as part of a larger constellation of malformation syndromes. As a child grows, the pink to red patches grow in proportion to the child's growth, the red color deepens, and the area thickens. Capillary malformations occur in 0.1 to 2 percent of newborns. The etiology is unknown.

Laser Treatment of Hemangiomas and Port Wine Stains (PWS)

Laser treatment of hemangiomas and PWS in its macular stage (childhood) may prevent the development of the hypertrophic component of the lesion. The pulsed dye laser was developed specifically to treat cutaneous vascular lesions. Laser treatment diminishes the existing blood vessels, making them smaller and fewer in number, reducing the progression of these lesions. Laser treatment can be administered in an outpatient setting, usually in multiple sessions.[3]

CLINICAL EVIDENCE AND LITERATURE REVIEW

EVIDENCE REVIEW

A review of the ECRI, Hayes, Cochrane, and PubMed databases was conducted regarding the use of laser treatment for port-wine stains. Below is a summary of the available evidence identified through January of 2024.

- In 2012 (archived in 2018), Hayes conducted a health technology assessment of pulsed dye laser (PDL) therapy for cutaneous vascular lesions.[3] Eight randomized trials and 14 nonrandomized trials were included in the assessment for PWS. The review found that PDL offered a better blanching response with fewer side effects than other laser treatments. Three studies found that cryogen sprayed cooled PDL was superior to PDL with respect to PWS clearing, while a fourth study found no difference between treatments in lightening or pain. When comparing PDL to newer technologies such as intense pulsed light and photodynamic therapy, there was no consistent evidence that newer technologies had greater benefit than PDL.

  Two randomized trials, 3 retrospective comparative studies, and 3 case series were included for hemangiomas, mainly focusing on infant and child populations. One randomized trial found no difference between cryogen PDL and PDL therapy for lesion clearance, although cryogen PDL significantly reduced the mean time of maximum hemangioma proliferation with fewer adverse effects. Another randomized trial found that early PDL treatment was no better than observation in infants, potentially increasing risk of skin atrophy and hypopigmentation. There is contrasting evidence for the benefits or different laser treatments versus observations in children. Hemangiomas may resolve spontaneously without treatment, but 20-40% of children are left with residual skin changes that may lead to permanent deformation of facial features.

  Hayes included 2 systematic review in their assessment. One systematic review conducted by the Canadian Agency for Drugs and Technologies in Health found that included studies were generally of poor quality, but the evidence suggests that PDL is a safe and effective treatment for PWS compared to alternative treatments.

  The second systematic review was a 2011 systematic review by Cochrane that included 5 randomized controlled trials (RCTs) involving 103 subjects to evaluate (pulsed dye laser) PDL against other light sources.[4] PDL resulted in more than 25% reduction in redness in 50-100% of the participants. This result was after 1 to 3 treatments for up to 4-6 months post operatively. Cochrane reviewers noted that additional high-quality RCTs are needed to compare different laser treatments and assess patient satisfaction. The authors concluded the PDL leads to clinically relevant clearance of PWS.

- In 2018, a Cochrane review was published on interventions for infantile hemangiomas of the skin.[5] The review included 28 randomized trials with a total of 1728 participants, assessing interventions including beta blockers, lasers, radiation therapy, and steroids. Two trials with 142 children were assessed comparing PDL to wait-and-see. The trials found no differences between the two groups in terms of clearance. In one study, risk of skin atrophy was 3.46 times higher after PDL than wait and see, and risk of hypopigmentation was 3.05 times higher after PDL. The authors concluded that that there is no evidence of a difference in achieving clearance of hemangiomas between PDL and wait-and-see.

- Additional, small, nonrandomized studies were identified which support the use of laser treatment of port wine stains.[6-8]

CLINICAL PRACTICE GUIDELINES

American Academy of Pediatrics (AAP)

In 2019, the AAP published a clinical practice guideline for the management of infantile hemangiomas. They recommend surgery and laser therapy as treatment options in managing selected infantile hemangiomas, giving the recommendation a grade C, moderate recommendation rating.[9]

EVIDENCE SUMMARY

There are limited large studies regarding pulsed dye laser (PDL) to treat hemangiomas and port wine stains (capillary malformations). However, the evidence does demonstrate that PDL is an effective method for reducing the progression of skin thickening and lesion formation, and is therefore considered standard of care.

BILLING GUIDELINES AND CODING

CPT codes 17106-17108 are used for the destruction of vacular proliferative lesions. If a lesion is not considered a "vascular proliferative lesion" or if the lesion is not destroyed, then the treatment should not be reported using these codes. In the absence of a more specific CPT code, an unlisted code (e.g., 17999) would be used instead.

CODES*		
CPT	17106	Destruction of cutaneous vascular proliferative lesions (eg, laser technique); less than 10 sq cm
	17107	Destruction of cutaneous vascular proliferative lesions (eg, laser technique); 10.0 to 50.0 sq cm
	17108	Destruction of cutaneous vascular proliferative lesions (eg, laser technique); over 50.0 sq cm

***Coding Notes:**

- The above code list is provided as a courtesy and may not be all-inclusive. Inclusion or omission of a code from this policy neither implies nor guarantees reimbursement or coverage. Some codes may not require routine review for medical necessity, but they are subject to provider contracts, as well as member benefits, eligibility and potential utilization audit.
- All unlisted codes are reviewed for medical necessity, correct coding, and pricing at the claim level. If an unlisted code is submitted for non-covered services addressed in this policy then it will be **denied as not covered**. If an unlisted code is submitted for potentially covered services addressed in this policy, to avoid post-service denial, **prior authorization is recommended**.
- **See the non-covered and prior authorization lists on the Company Medical Policy, Reimbursement Policy, Pharmacy Policy and Provider Information website for additional information.**
- HCPCS/CPT code(s) may be subject to National Correct Coding Initiative (NCCI) procedure-to-procedure (PTP) bundling edits and daily maximum edits known as "medically unlikely edits" (MUEs) published by the Centers for Medicare and Medicaid Services (CMS). This policy does not take precedence over NCCI edits or MUEs. Please refer to the CMS website for coding guidelines and applicable code combinations.

REFERENCES

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3. Hayes. Pulsed Dye Laser Therapy For Cutaneous Vascular Lesions. Archived 1/20/2018. https://evidence.hayesinc.com/report/dir.puls0001/executive.html. Accessed 1/10/2023.
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5. Novoa M, Baselga E, Beltran S, et al. Interventions for infantile haemangiomas of the skin. *Cochrane Database of Systematic Reviews.* 2018(4).
6. Murthy AS, Dawson A, Gupta D, Spring S, Cordoro KM. Utility and tolerability of the long-pulsed 1064-nm neodymium:yttrium-aluminum-garnet (LP Nd:YAG) laser for treatment of symptomatic or disfiguring vascular malformations in children and adolescents. *J Am Acad Dermatol.* 2017;77(3):473-479.
7. Al-Dhalimi MA, Al-Janabi MH. Split lesion randomized comparative study between long pulsed Nd:YAG laser 532 and 1,064 nm in treatment of facial port-wine stain. *Lasers Surg Med.* 2016;48(9):852-858.
8. Perruchoud DL, Cazzaniga S, Heidemeyer K, et al. Treatment of sporadic port-wine stains: a retrospective review of 17 cases consecutively treated by pulsed sequential dual wavelength 595 and 1064 nm laser. *J Eur Acad Dermatol Venereol.* 2017;31(3):557-563.
9. Krowchuk DP, Frieden IJ, Mancini AJ, et al. Clinical Practice Guideline for the Management of Infantile Hemangiomas. *Pediatrics.* 2019;143(1):e20183475.

POLICY REVISION HISTORY

DATE	REVISION SUMMARY
2/2023	Converted to new policy template.
3/2023	Annual review, no changes. Separated into Company & Medicare policies.
3/2024	Annual review, no changes to policy criteria. Clarification notes added to policy criteria and billing guideline.