



CIGNA MEDICAL COVERAGE POLICY

The following Coverage Policy applies to all health benefit plans administered by CIGNA Companies including plans formerly administered by Great-West Healthcare, which is now a part of CIGNA.

Effective Date 2/15/2011
Next Review Date 2/15/2012
Coverage Policy Number 0043

Subject **Acne Procedures**

Table of Contents

Coverage Policy	1
General Background	2
Coding/Billing Information	6
References	7
Policy History	10

Hyperlink to Related Coverage Policies

Actinic Keratosis Treatments
 Benign Skin Lesion Removal
 Photodynamic Therapy for Dermatologic Conditions
 Phototherapy, Photochemotherapy and Excimer Laser Therapy for Dermatologic Conditions
 Rosacea Procedures
 Scar Revision

INSTRUCTIONS FOR USE

Coverage Policies are intended to provide guidance in interpreting certain **standard** CIGNA HealthCare benefit plans. Please note, the terms of a customer's particular benefit plan document [Group Service Agreement (GSA), Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a customer's benefit plan document **always supercedes** the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. Proprietary information of CIGNA. Copyright ©2011 CIGNA

Coverage Policy

Coverage for the treatment of acne scarring is dependent on benefit plan language, may be subject to the provisions of a cosmetic and/or reconstructive surgery benefit, and may be governed by state mandates. Under many benefit plans, treatment of acne scarring is not covered when performed solely for the purpose of altering appearance or self-esteem or to treat psychological symptomatology or psychosocial complaints related to one's appearance. Please refer to the applicable benefit plan language to determine benefit availability and the terms, conditions and limitations of coverage.

Please refer to the applicable pharmacy benefit to determine benefit availability and the terms and conditions of coverage for acne medications.

CIGNA covers ANY of the following procedures as medically necessary for the treatment of active acne vulgaris:

- manual comedone extraction for noninflammatory comedones
- intralesional injections of corticosteroids (e.g., triamcinolone acetonide) for large nodules
- incision and drainage or opening and removal of cysts or pustules
- cryotherapy/cryosurgery (e.g., liquid nitrogen, acetone slush, carbon dioxide [CO₂]) for isolated inflammatory nodular lesions that fail to respond to topical and systemic medication therapy

- light cautery/electrocauterization or CO₂ laser for multiple macrocomedones (e.g., microcystic acne, whiteheads greater than 1.5 mm in diameter) that fail to respond to topical and systemic medication therapy

CIGNA does not cover ANY of the following for the treatment of active acne vulgaris, when used alone or in combination, because each is considered experimental, investigational or unproven (this list may not be all-inclusive):

- chemical peels of any type (e.g., superficial, medium-depth and deep, as well as slush peels)
- phototherapy (including exposure to ultraviolet A or B; red, blue or red-blue light; Psoralens ultraviolet actinotherapy [PUVA]), laser or pulsed dye laser (PDL) therapy or photodynamic therapy (PDT)

Under many benefit plans, CIGNA does not cover the treatment of acne scarring and other untoward cosmetic effects of acne, including but not limited to any of the following procedures, when used alone or in combination, because each is considered cosmetic in nature and not medically necessary:

- chemical peels of any type (e.g., superficial, medium-depth and deep peels, slush peels or chemabrasion)
- dermabrasion/dermaplaning/salabrasion (i.e., abrasion with salt)
- microdermabrasion/particulate resurfacing
- dermabrasion with selective freezing or icing (e.g., using ethyl chloride or Freon)
- dermaplaning
- collagen injections
- polymethyl-methacrylate microspheres with collagen (e.g., Artecoll[®], Rofil Medical USA)
- gelatin matrix implant
- hyaluronic acid derivative fillers (e.g., Restylane[®], Q-Med Inc.)
- autologous fat replacement
- punch biopsy elevation
- punch excision with or without full-thickness skin graft replacement
- electrodesiccation
- cryopeeling (i.e., superficial freezing of damaged skin) for small, widespread hypertrophic scars
- laser dermablation/laser abrasion using carbon dioxide or erbium:YAG lasers with or without follow-up cryotherapy
- cryotherapy/cryosurgery, when performed to treat acne scarring
- pulsed dye laser (PDL) treatment, when performed to treat acne scarring
- subcision or subcutaneous incision

General Background

Acne vulgaris is a chronic, inflammatory disease of the pilosebaceous follicles characterized by the formation of open and closed comedones (i.e., whiteheads and blackheads), erythematous papules and pustules, pseudocysts and nodules. It is generally a condition of adolescence involving the face, neck, upper trunk and upper arms. Factors responsible for the pathogenesis of acne vulgaris include increased sebum production, abnormality of the microbial flora, abnormal keratinization of sebaceous and follicular epithelium/ductal hypercornification, and inflammation.

The general principles of acne treatment include decreasing sebaceous gland secretion, correcting altered patterns of ductal hypercornification/abnormal keratinization, decreasing the population of the bacterium *Propionibacterium acnes* (*P. acnes*) and reducing inflammation. Acne vulgaris therapies range from over-the-counter and prescription topical medications to systemic therapy with antibiotics, retinoids and hormonal medications, to physical modalities, including surgery. Selection of an intervention is dependent upon the extent, severity and duration of the condition, as well as the type of lesions involved. Topical therapy is considered the appropriate first-line treatment for most patients with acne. Oral medications may be indicated when topical treatment fails.

Physical and Surgical Treatment

Physical modalities are an option when more conservative treatment fails to improve the condition. Therapies considered the standard of care include comedone removal; cryotherapy or superficial freezing with liquid nitrogen, acetone slush or carbon dioxide; and intralesional steroid injections. While chemical peels are used in practice, their role in the treatment of active acne has not been established. Typically, incision and drainage of pustules is not used as a treatment option because of possible resultant scarring. Comedone removal, performed by a physician using a comedone extractor, can be used for the treatment of isolated noninflammatory comedones. Cryotherapy with carbon dioxide (CO₂), liquid nitrogen, acetone slush, or solid carbon dioxide mixed with acetone can be used for isolated inflammatory nodular lesions; however, this method is typically reserved for patients who did not respond to more conventional therapy. Intralesional injections of triamcinolone acetonide can be helpful in the treatment of large nodules. Removal of densely-packed, closed comedones, macrocomedones, and cysts by electrocautery or CO₂ laser is generally reserved for patients in whom well-established topical or systemic therapy has failed.

Chemical Peels

A chemical peel involves the application of a chemical solution with the goal of producing controlled removal of layers of the epidermis and superficial dermis. Chemical peel solutions damage the outer layers of the skin and stimulate collagen formation, resulting in dermal regeneration and thereby improving the appearance of the skin. Alpha-hydroxy acids (AHAs), such as glycolic, lactic, or fruit acid, are used in superficial peeling to rejuvenate and resurface sun-damaged skin, soften the appearance of pores, treat fine wrinkles and reduce uneven pigmentation. Trichloroacetic acid (TCA) is used for medium-depth peeling to treat surface wrinkles and sun-damaged skin. Phenol, the strongest agent, is used in deep chemical peeling to diminish coarse facial wrinkles and correct pigment abnormalities.

Although chemical peels are generally performed for cosmetic purposes, it has been suggested that superficial or epidermal peels, using AHAs, may have a comedolytic effect on comedonal acne lesions by loosening follicular impaction and may be appropriate for individuals with widespread lesions for whom standard treatment has failed. However, the role of superficial peels in the overall management of patients with active acne has not been established through well-designed trials. Randomized controlled trials (RCTs) directly comparing alpha-hydroxy acids with well-established treatments, such as topical retinoids, are lacking.

While medium-depth and deep chemical peels are typically performed for cosmesis, they may also have an application in the treatment of patients with large numbers of actinic keratoses or other pre-malignant lesions. They are not, however, considered appropriate for active acne, as they have been shown to exacerbate the inflammation associated with acne.

There is insufficient evidence in the published, peer-reviewed scientific literature to support the use of any type of chemical peel in the treatment of active acne vulgaris. The use of chemical peels, when performed to alter or improve the appearance of the skin, is considered cosmetic in nature.

Phototherapy/Ultraviolet Radiation/Laser Therapy/Photodynamic Therapy

Light-based therapies, which include phototherapy (e.g., ultraviolet A or B; red, blue, or red-blue light; Psoralens ultraviolet actinotherapy [PUVA]), lasers, pulsed dye laser and photodynamic therapy (PDT), have been investigated for the treatment of acne vulgaris.

U.S. Food and Drug Administration (FDA): A number of phototherapy and laser devices have received U.S. Food and Drug Administration (FDA)-approval under the 510(k) process for the treatment of acne vulgaris, including the following:

- The Clareblend LED Probe (Clareblend Inc., Reno, Nevada) was approved in October 2008. The Clareblend Probe is a hand held device that utilizes light emitting diodes (LED) to provide LED light to the body. The output is pre-tuned to one wavelength with a narrow spectral bandwidth. Indications for the Clareblend device include the treatment of mild to moderate acne.
- The Aesthera Photopneumatic TM (PPx™) System (Aesthera Corporation, Pleasanton, CA) was granted marketing approval in September 2006, Intended uses for the PPx intense pulsed light system include the treatment of mild to moderate acne, including pustular acne, comedonal acne, and mild-to-moderate inflammatory acne (acne vulgaris).

- The Omnilux Blue (Photo Therapeutics Limited, Altrincham, Cheshire) received approval in June 2003. The device is a visible light source pre-tuned to one wavelength (i.e., 415 ± 5 nm) with a narrow spectral bandwidth. Indications for the Omnilux Blue include the treatment of moderate inflammatory acne vulgaris.
- The ClearLight™ System (CureLight Ltd., Or Akiva, Israel) was approved in August 2002 for the treatment of moderate, inflammatory acne vulgaris. This system is a high-intensity lamp that emits visible light in the violet-blue range.
- The Smoothbeam™ Diode Laser System (Candela, Wayland, MA) was approved for the treatment of mild to moderate inflammatory acne vulgaris in November 2000. This continuous-wave laser is controlled by an internal processor and contains a cooling device designed to reduce the discomfort associated with laser therapy.

Phototherapy: Exposure to ultraviolet radiation or other light (e.g., Ultraviolet B, Ultraviolet A, red light, blue light, mixed red-blue light and Psoralens Ultraviolet Actinotherapy) has been proposed as a treatment for acne vulgaris. Proponents of this treatment suggest that *P. acnes* produces porphyrins, which absorb light energy at the near-ultraviolet and blue-light spectrum (Kaminsky, 2003), leading to oxidation and ultimately destroying bacteria. It has also been theorized that exposure produces a comedolytic action. Potential short- and long-term side effects of repeated exposure to ultraviolet radiation include nausea, itching and burning of the affected area, premature aging and cancer of the skin, and eye damage.

The evidence assessing the safety and effectiveness of visible light therapy consists of nonrandomized comparative trials, split-face, double-blind controlled studies and few RCTs (Ammad, et al., 2008; Lee, et al., 2006; Gold, et al., 2005; Morton, et al., 2005; Elman, et al., 2003; Papageorgiou, et al., 2000). Patient populations have ranged from 10–107. Studies have reported that phototherapy primarily with visible blue light resulted in mean reduction on inflammatory acne lesions ranging from 50–81%.

The available studies are limited by small sample sizes, and limited follow-up. Few studies have compared the effectiveness of visible light to that of established treatments for acne vulgaris. There is insufficient evidence to support the use of ultraviolet radiation or visible light for the treatment of acne vulgaris.

Laser Therapy: It has been proposed that laser treatment of acne vulgaris results in an area of thermal injury at the level of the dermis where the sebaceous glands are located. The evidence evaluating the safety and effectiveness of laser therapy for the acne includes randomized split-face trials and case series with sample sizes ranging from 13–27 and follow-up of four weeks to 12 months (Yeung, et al., 2009; Astner, et al., 2008; Konishi, et al., 2007; Wang, et al., 2006; Jih, et al., 2006). These studies have reported a reduction of 29%–76.1% in inflammatory acne lesion counts after laser treatment.

Although preliminary evidence suggests that laser therapy may result in improvement of acne symptoms, larger, well-designed studies with long term follow-up are needed to determine the role of this therapy in the treatment of acne vulgaris.

Pulsed Dye Laser (PDL) Therapy: PDL is designed to destroy small blood vessels under the first layer of skin without destroying the surrounding tissue and, as such, is typically used to treat vascular lesions. However, this type of laser has been investigated as a treatment for mild-to-moderate acne. Several RCTs with small patient populations and short-term follow-up have assessed the safety and effectiveness of PDL for this indication.

A single-blinded RCT (n=80) by Karsai et al. (2010) compared the use of a proven topical treatment alone versus this treatment in combination with PDL. No substantial benefit of adjuvant PDL was found.

Leheta (2009) performed an RCT (n=45) that compared outcomes for three groups of patients whose acne vulgaris was treated with PDL, topical preparations or chemical peeling. In the short term a significant improvement of lesions within each group was reported, but there was no significant difference found between the three protocols after the treatment period. Remission in the follow-up period was found to be higher in the PDL group.

An RCT (n=45) by Sami et al. (2008) evaluated the effectiveness PDL, intense IPL and LED phototherapy and reported a $\geq 90\%$ reduction in acne lesions treated with the PDL, 41.7% reduction in cases of IPL and 35.3% reduction for LED cases at one-month follow-up.

Haerdersdal et al. (2008b) found a significantly greater reduction in inflammatory lesions on MAL-LPDL-treated skin versus LPDL-treated skin at four weeks ($p=0.003$) and 12 weeks ($p=0.004$) with up to 80% reduction in inflammatory lesions. A single-blind, split-face RCT ($n=40$) by Orringer et al. (2004) reported that PDL did not result in significant improvement of facial acne. Seaton et al. (2003) compared PDL to sham in an RCT ($n=41$) and reported a 49% decrease in inflammatory lesions for patients who received PDL versus a reduction of 10% for those in the sham treatment group.

There is insufficient evidence in the published peer-reviewed medical literature to support the use of PDL for the treatment of acne vulgaris.

Photodynamic Therapy (PDT): PDT is characterized by the use of visible light in conjunction with the topical application of a photosensitizer such as 5-aminolevulinic acid (ALA) or methyl aminolaevulinate (MAL) that is intended to amplify the response to light therapy. Studies including case series and RCTs ($n=10-44$) have reported a 60%–80% improvement of acne lesions after treatment with ALA-PDT (Orringer, et al., 2010; Santos, et al., 2005; Pollack, et al., 2004; Taub, 2004; Goldman and Boyce, 2003) and MAL-PDT (Bissonnette, et al., 2010; Wiegell and Wulf, 2006; Horfelt, et al., 2006).

Systematic Reviews: A systematic review by Ingram and colleagues (2010) summarized clinical findings from RCTs ($n=62$ studies), systematic reviews ($n=3$) and a single guideline, all on the management of acne vulgaris. It was found that “PDT, phototherapy and laser therapy cannot be recommended universally for acne until minimal post-inflammatory pigmentation and longer-term benefit can be shown” (Ingram, et al., 2010).

Hamilton et al. (2009) reviewed 25 RCTs ($n=694$), 13 of light therapy and 12 of light therapy with light-activated topical cream (i.e., PDT). The trials were generally small with very short follow-up times. The review found limited or no benefit for light therapies alone. Study results could not be used in a meta-analysis because of the different wavelengths of light used across trials. Results of PDT trials were found to be more consistent and some short-term benefit was demonstrated in a meta-analysis of 3/12 trials. Overall, trials were limited by small sample sizes and short follow-up periods. There was a lack of studies comparing PDT with conventional treatment. Side effects of pain, erythema, and folliculitis followed by desquamation were reported (Hamilton, et al., 2009).

Haerdersdal et al. (2008a) reviewed 16 RCTs and three controlled trials ($n=587$) to assess the effects of optical treatments for acne vulgaris. The interventions included PDL, PDT, infrared lasers, broad-spectrum light sources and intense pulsed light. Most studies were intraindividual trials (12/19) with blinded response evaluations (12/19) and evaluated a short-term efficacy up to 12 weeks after treatment (17/19). Optical treatments were compared to standard intervention in two trials. Side-effects from optical treatments included pain, erythema, edema, crusting, hyperpigmentation, pustular eruptions and were reported to be more intense for treatments combined with ALA or MAL. It was summarized that based on the available evidence, optical treatments may improve inflammatory acne on a short-term basis. The most consistent outcomes were found for PDT. The reviewers noted that further studies are needed comparing optical versus conventional treatments (Haerdersdal, et al., 2008a).

At this time, the published, peer-reviewed scientific literature contains insufficient supportive evidence for the use of PDT in the treatment of acne vulgaris.

Professional Societies/Organizations

The British Association of Dermatologists guidelines for topical PDT state that “although PDT can improve inflammatory acne on the face and back, optimization of protocols, to sustain response while minimizing adverse effects, is awaited” (Morton, et al., 2008).

The American Academy of Dermatology (AAD) guidelines for the management of acne vulgaris state that topical therapy and systemic antibiotics are a standard of care for the treatment of acne vulgaris. The effect of intralesional injection with corticosteroids is also a well-established and recognized treatment for large inflammatory lesions. Although both glycolic acid-based and salicylic acid-based peeling preparations have been used in the treatment of this condition, there is very little evidence from clinical trials published in the peer-reviewed literature supporting the efficacy of peeling regimens. Additional research on the use of chemical peeling in the treatment of acne needs to be conducted in order to establish best practices for this modality. It is

noted that the topic of light and laser therapy for the treatment of acne vulgaris will be addressed in a future guideline (Strauss, et al., 2007).

The Institute for Clinical Systems Improvements (ICSI) guideline for acne management states that the use of both a topical retinoid and a topical antibiotic has been found to be an effective course of treatment. The guideline further states that, although there continue to be numerous studies about light treatment for acne, including blue light and with and without pretreatment with topical medications, the evidence is inadequate at this time to make a recommendation about the efficacy and safety of these treatments (ICSI, 2006).

Summary

Established treatments for acne vulgaris include topical therapies (e.g., antimicrobials, retinoids) and systemic therapies such as antibiotics, isotretinoin and hormonal medications. For patients who develop significant side effects or fail to respond to these options, physical or surgical treatment (e.g., cryotherapy, intralesional steroid injections, electrocauterization, comedone extraction) may be considered. Currently, there is insufficient evidence in the published, peer-reviewed scientific literature to support the use of light based therapies or chemical peels in the treatment of active acne vulgaris. Further well-designed, large-scale, randomized clinical trials are needed to determine the role of these modalities as an alternative to standard therapies. Even with appropriate treatment, scarring and other unwanted cosmetic changes, such as hyperpigmentation, are common complications of acne vulgaris. The goal of treating these sequelae is to improve appearance. Interventions such as dermabrasion, autologous fat replacement, or cryopeeling are generally considered to be cosmetic in nature when performed for acne scarring and are not appropriate for the treatment of active acne vulgaris.

Coding/Billing Information

Note: This list of codes may not be all-inclusive.

Covered when medically necessary:

CPT®* Codes	Description
10040	Acne surgery (eg, marsupialization, opening or removal of multiple milia, comedones, cysts, pustules)
11900	Injection, intralesional; up to and including seven lesions
11901	Injection, intralesional; more than seven lesions
17110	Destruction (eg, laser surgery, electrosurgery, cryosurgery, chemosurgery, surgical curettage), of benign lesions other than skin tags or cutaneous vascular lesions; up to 14 lesions
17111	Destruction (eg, laser surgery, electrosurgery, cryosurgery, chemosurgery, surgical curettage), of benign lesions other than skin tags or cutaneous vascular lesions; 15 or more lesions
17340	Cryotherapy (CO2 slush, liquid N ₂) for acne

ICD-9-CM Diagnosis Codes	Description
706.1	Other acne

Experimental/Investigational/Unproven/Not Medically Necessary/Cosmetic/Not Covered when provided as a treatment for active acne vulgaris or acne scarring:

CPT* Codes	Description
11100	Biopsy of skin, subcutaneous tissue and/or mucous membrane (including simple closure), unless otherwise listed; single lesion
11101	Biopsy of skin, subcutaneous tissue and/or mucous membrane (including simple closure), unless otherwise listed; each separate/additional lesion (List separately)

	in addition to code for primary procedure)
11950	Subcutaneous injection of filling material (eg, collagen); 1 cc or less
11951	Subcutaneous injection of filling material (eg, collagen); 1.1 to 5.0 cc
11952	Subcutaneous injection of filling material (eg, collagen); 5.1 to 10.0 cc
11954	Subcutaneous injection of filling material (eg, collagen); over 10.0 cc
15780	Dermabrasion; total face (eg, for acne scarring, fine wrinkling, rhytids, general keratosis)
15781	Dermabrasion; segmental, face
15782	Dermabrasion; regional, other than face
15788	Chemical peel, facial; epidermal
15789	Chemical peel, facial; dermal
15792	Chemical peel, nonfacial; epidermal
15793	Chemical peel, nonfacial; dermal
17360	Chemical exfoliation for acne (e.g., acne paste, acid)
96900	Actinotherapy (ultraviolet light)
96910	Photochemotherapy; ultraviolet B Goeckerman treatment) or petrolatum and ultraviolet B
96912	Photochemotherapy; psoralens and ultraviolet A (PUVA)

HCPCS Codes	Description
E0691	Ultraviolet light therapy system, includes bulbs/lamps, timer and eye protection; treatment area two square feet or less
E0692	Ultraviolet light therapy system, includes bulbs/lamps, timer and eye protection, four foot panel
E0693	Ultraviolet light therapy system, includes bulbs/lamps, timer and eye protection, six foot panel
E0694	Ultraviolet multidirectional light therapy system in six foot cabinet, includes bulbs/lamps, timer and eye protection

***Current Procedural Terminology (CPT®) © 2010 American Medical Association: Chicago, IL.**

References

1. Ammad S, Gonzales M, Edwards C, Finlay AY, Mills C. An assessment of the efficacy of blue light phototherapy in the treatment of acne vulgaris. *J Cosmet Dermatol*. 2008 Sep;7(3):180-8.
2. Astner S, Tsao SS. Clinical evaluation of a 1,450-nm diode laser as adjunctive treatment for refractory facial acne vulgaris. *Dermatol Surg*. 2008 Aug;34(8):1054-61. Epub 2008 May 6.
3. Bissonnette R, Maari C, Nigen S, Provost N, Bolduc C. Photodynamic therapy with methylaminolevulinate 80 mg/g without occlusion improves acne vulgaris. *J Drugs Dermatol*. 2010 Nov;9(11):1347-52.
4. ECRI Institute. Hotline Response [database online]. Plymouth Meeting (PA): ECRI Institute; 2007 Jun 5. Laser Therapy for Acne. Available at URL address: <http://www.ecri.org>.
5. ECRI Institute. Hotline Response [database online]. Plymouth Meeting (PA): ECRI Institute; 2007 Jun 4. Blue Light Therapy for Acne. Available at URL address: <http://www.ecri.org>.
6. Elman M, Slatkine M, Harth Y. The effective treatment of acne vulgaris by a high-intensity, narrow band 405-420 nm light source. *J Cosmet Laser Ther*. 2003 Jun;5(2):111-7..
7. Gold MH, Rao J, Goldman MP, Bridges TM, Bradshaw VL, Boring MM, et al. A multicenter clinical evaluation of the treatment of mild to moderate inflammatory acne vulgaris of the face with visible blue

- light in comparison to topical 1% clindamycin antibiotic solution. *J Drugs Dermatol*. 2005 Jan-Feb;4(1):64-70.
8. Gold MH. Acne and PDT: new techniques with lasers and light sources. *Lasers Med Sci*. 2007 Jun;22(2):67-72. Epub 2007 Jan 16.
 9. Goldman MP, Boyce SM. A single-center study of aminolevulinic acid and 417 NM photodynamic therapy in the treatment of moderate to severe acne vulgaris. *J Drugs Dermatol*. 2003 Aug;2(4):393-6.
 10. Gollnick H, Cunliffe W, Berson D, Dreno D, Finlay A, Leyden JJ, et al. Management of acne: report from a Global Alliance to Improve Outcomes in Acne. *J Am Acad Dermatol*. 2003 Jul;49(1 Suppl):S1-37.
 11. Haedersdal M, Togsverd-Bo K, Wulf HC. Evidence-based review of lasers, light sources and photodynamic therapy in the treatment of acne vulgaris. *J Eur Acad Dermatol Venereol*. 2008a Mar;22(3):267-78. Epub 2008 Jan 23.
 12. Haedersdal M, Togsverd-Bo K, Wiegell SR, Wulf HC. Long-pulsed dye laser versus long-pulsed dye laser-assisted photodynamic therapy for acne vulgaris: A randomized controlled trial. *J Am Acad Dermatol*. 2008b Mar;58(3):387-94..
 13. Hamilton FL, Car J, Lyons C, Car M, Layton A, Majeed A. Laser and other light therapies for the treatment of acne vulgaris: systematic review. *Br J Dermatol*. 2009 Jun;160(6):1273-85. Epub 2009 Feb 23.
 14. Horfelt C, Funk J, Frohm-Nilsson M, Wiegleb Edstrom D, Wennberg AM. Topical methyl aminolaevulinate photodynamic therapy for treatment of facial acne vulgaris: results of a randomized, controlled study. *Br J Dermatol*. 2006 Sep;155(3):608-13.
 15. Ingram JR, Grindlay DJ, Williams HC. Management of acne vulgaris: an evidence-based update. *Clin Exp Dermatol*. 2010 Jun;35(4):351-4. Epub 2009 Oct 23.
 16. Institute for Clinical Systems Improvement (ICSI). Acne Management. September, 2003. Updated May, 2006. Accessed January 14, 2011. Available at URL address: http://www.icsi.org/guidelines_and_more/archived___retired_scientific_documents/for_patients_families/acne_management___for_patients___families_.html
 17. Jih MH, Friedman PM, Goldberg LH, Robles M, Glaich AS, Kimyai-Asadi A. The 1450-nm diode laser for facial inflammatory acne vulgaris: dose-response and 12-month follow-up study. *J Am Acad Dermatol*. 2006 Jul;55(1):80-7.
 18. Kaminsky A. Less common methods to treat acne. *Dermatology*. 2003;206(1):68-73.
 19. A single-blinded RCT (n=80) by Karsai et al. (2010) compared the use of a proven topical treatment alone versus this treatment in combination with PDL. No substantial benefit of adjuvant PDL was found.
 20. Kempiak SJ, Uebelhoer N. Superficial chemical peels and microdermabrasion for acne vulgaris. *Semin Cutan Med Surg*. 2008 Sep;27(3):212-20.
 21. Konishi N, Endo H, Oiso N, Kawara S, Kawada A. Acne phototherapy with a 1450-nm diode laser: an open study. *Ther Clin Risk Manag*. 2007 Mar;3(1):205-9.
 22. Landau M. Advances in deep chemical peels. *Dermatol Nurs*. 2005 Dec;17(6):438-41.
 23. Lee SY, You CE, Park MY. Blue and red light combination LED phototherapy for acne vulgaris in patients with skin phototype IV. *Lasers Surg Med*. 2006 Nov 16; [Epub ahead of print]
 24. Leheta TM. Role of the 585-nm pulsed dye laser in the treatment of acne in comparison with other topical therapeutic modalities. *J Cosmet Laser Ther*. 2009 Jun;11(2):118-24.

25. Mariwalla K, Rohrer TE. Use of lasers and light-based therapies for treatment of acne vulgaris. *Lasers Surg Med*. 2005 Dec;37(5):333-42.
26. Morton CA, Scholefield RD, Whitehurst C, Birch J. An open study to determine the efficacy of blue light in the treatment of mild to moderate acne. *J Dermatolog Treat*. 2005;16(4):219-23.
27. Morton CA, McKenna KE, Rhodes LE; British Association of Dermatologists Therapy Guidelines and Audit Subcommittee and the British Photodermatology Group. Guidelines for topical photodynamic therapy: update. *Br J Dermatol*. 2008 Dec;159(6):1245-66.
28. Orringer JS, Kang S, Hamilton T, Schumacher W, Cho S, Hammerberg C, et al. Treatment of acne vulgaris with a pulsed dye laser: a randomized controlled trial. *JAMA*. 2004 Jun 16;291(23):2834-9.
29. Orringer JS, Kang S, Maier L, Johnson TM, Sachs DL, Karimipour DJ, et al. A randomized, controlled, split-face clinical trial of 1320-nm Nd:YAG laser therapy in the treatment of acne vulgaris. *J Am Acad Dermatol*. 2007 Mar;56(3):432-8. Epub 2007 Jan 18.
30. Orringer JS, Sachs DL, Bailey E, Kang S, Hamilton T, Voorhees JJ. Photodynamic therapy for acne vulgaris: a randomized, controlled, split-face clinical trial of topical aminolevulinic acid and pulsed dye laser therapy. *J Cosmet Dermatol*. 2010 Mar;9(1):28-34.
31. Papageorgiou P, Katsambas A, Chu A. Phototherapy with blue (415 nm) and red (660 nm) light in the treatment of acne vulgaris. *Br J Dermatol*. 2000 May;142(5):973-8.
32. Pollock B, Turner D, Stringer MR, Bojar RA, Goulden V, Stables GI, et al. Topical aminolaevulinic acid-photodynamic therapy for the treatment of acne vulgaris: a study of clinical efficacy and mechanism of action. *Br J Dermatol*. 2004 Sep;151(3):616-22..
33. Sami NA, Attia AT, Badawi AM. Phototherapy in the treatment of acne vulgaris. *J Drugs Dermatol*. 2008 Jul;7(7):627-32.
34. Santos MA, Belo VG, Santos G. Effectiveness of photodynamic therapy with topical 5-aminolevulinic acid and intense pulsed light versus intense pulsed light alone in the treatment of acne vulgaris: comparative study. *Dermatol Surg*. 2005 Aug;31(8 Pt 1):910-5.
35. Seaton ED, Charakida A, Mouser PE, Grace I, Clement RM, Chu AC. Pulsed-dye laser treatment for inflammatory acne vulgaris: randomised controlled trial. *Lancet*. 2003 Oct 25;362(9393):1347-52.
36. Strauss JS, Krowchuk DP, Leyden JJ, Lucky AW, Shalita AR, Siegfried EC, et al. Guidelines of care for acne vulgaris management. *J Am Acad Dermatol*. 2007 Apr;56(4):651-63. Epub 2007 Feb 5.
37. Taub AF. Photodynamic therapy for the treatment of acne: a pilot study. *J Drugs Dermatol*. 2004 Nov-Dec;3(6 Suppl):S10-4.
38. Taub AF. Procedural treatments for acne vulgaris. *Dermatol Surg*. 2007 Sep;33(9):1005-26.
39. U.S. Food and Drug Administration (FDA) Center for Devices and Radiological Health (CDRH). 510(k)s final decisions rendered for December 2003. Accessed Jan 16, 2005. Available at URL address: <http://www.fda.gov/cdrh/pdf3/k030834.pdf>
40. Wang SQ, Counters JT, Flor ME, Zelickson BD. Treatment of inflammatory facial acne with the 1,450 nm diode laser alone versus microdermabrasion plus the 1,450 nm laser: a randomized, split-face trial. *Dermatol Surg*. 2006 Feb;32(2):249-55; discussion 255.
41. Wiegell SR, Wulf HC. Photodynamic therapy of acne vulgaris using methyl aminolaevulinate: a blinded, randomized, controlled trial. *Br J Dermatol*. 2006 May;154(5):969-76.

42. Yeung CK, Shek SY, Bjerring P, Yu CS, Kono T, Chan HH. A comparative study of intense pulsed light alone and its combination with photodynamic therapy for the treatment of facial acne in Asian skin. *Lasers Surg Med.* 2007 Jan;39(1):1-6.
43. Yeung CK, Shek SY, Yu CS, Kono T, Chan HH. Treatment of inflammatory facial acne with 1,450-nm diode laser in type IV to V Asian skin using an optimal combination of laser parameters. *Dermatol Surg.* 2009 Apr;35(4):593-600. Epub 2009 Mar 20.

Policy History

Pre-Merger Organizations	Last Review Date	Policy Number	Title
CIGNA HealthCare	2/15/2008	0043	Acne Procedures
Great-West Healthcare	12/20/2007	95.313.06	Cosmetic and Reconstructive Services

“CIGNA”, “CIGNA HealthCare” and the “Tree of Life” logo are registered service marks of CIGNA Intellectual Property, Inc., licensed for use by CIGNA Corporation and its operating subsidiaries. All products and services are provided by such operating subsidiaries and not by CIGNA Corporation. Such operating subsidiaries include Connecticut General Life Insurance Company, CIGNA Health and Life Insurance Company, CIGNA Behavioral Health, Inc., CIGNA Health Management, Inc., and HMO or service company subsidiaries of CIGNA Health Corporation and CIGNA Dental Health, Inc. In Arizona, HMO plans are offered by CIGNA HealthCare of Arizona, Inc. In California, HMO plans are offered by CIGNA HealthCare of California, Inc. In Connecticut, HMO plans are offered by CIGNA HealthCare of Connecticut, Inc. In North Carolina, HMO plans are offered by CIGNA HealthCare of North Carolina, Inc. In Virginia, HMO plans are offered by CIGNA HealthCare Mid-Atlantic, Inc. All other medical plans in these states are insured or administered by Connecticut General Life Insurance Company or CIGNA Health and Life Insurance Company.