



# Louisiana

## Electronic Brachytherapy for Nonmelanoma Skin Cancer

Policy # 00477

Original Effective Date: 08/19/2015

Current Effective Date: 10/12/2020

*Applies to all products administered or underwritten by Blue Cross and Blue Shield of Louisiana and its subsidiary, HMO Louisiana, Inc. (collectively referred to as the "Company"), unless otherwise provided in the applicable contract. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.*

### Services Are Considered Investigational

*Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.*

Based on review of available data, the Company considers electronic brachytherapy for the treatment of nonmelanoma skin cancer (See Policy Guidelines) to be **investigational**.\*

### Background/Overview

#### Nonmelanoma Skin Cancer

Squamous cell carcinoma and basal cell carcinoma are the most common types of nonmelanoma skin cancer in the United States, affecting between 1 million and 3 million people per year respectively, and increasing at a rate of 3% to 8% per year. Other types (eg, T-cell lymphoma, Merkel cell tumor, basosquamous carcinoma, Kaposi sarcoma) are much less common. The primary risk factor for nonmelanoma skin cancer is sun exposure, with additional risk factors such as toxic exposures, other ionizing radiation exposure, and immunosuppression playing smaller roles. Although these cancers are rarely fatal, they can impact the quality of life, functional status, and physical appearance.

#### Treatment

In general, the most effective treatment for nonmelanoma skin cancer is surgical. If surgery is not feasible or preferred, cryosurgery, topical therapy, or radiotherapy can be considered, though the cure rate may be lower. When considering the most appropriate treatment strategy, recurrence rate, preservation of function, patient expectations, and potential adverse events should be considered.

#### Surgical

The choice of surgical procedure depends on the histologic type, size, and location of the lesion. Patient preferences can also play a factor in surgical decisions due to cosmetic reasons-as well as the consideration of comorbidities and patient risk factors, such as anticoagulation. Local excisional

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Electronic Brachytherapy for Nonmelanoma Skin Cancer

Policy # 00477

Original Effective Date: 08/19/2015

Current Effective Date: 10/12/2020

procedures, such as electrodesiccation and curettage or cryotherapy, can be used for low-risk lesions, while surgical excision is indicated for lesions that are not low risk. Mohs surgery is an excisional procedure that uses microscopic guidance to achieve greater precision and sparing of normal tissue. In patients who meet criteria for Mohs surgery, 5-year cure rates for basal cell cancer range from 98% to 99%, making Mohs surgery the preferred procedure for those who qualify.

### **Radiotherapy**

Radiotherapy is indicated for certain nonmelanoma skin cancers not amenable to surgery. In some cases, this is due to the location of the lesion on the eyelid, nose, or other structures that make surgery more difficult and which may be expected to have a less desirable cosmetic outcome. In other cases, surgery may be relatively contraindicated due to clinical factors, such as bleeding risk or advanced age. In elderly patients with a relatively large tumor that would require extensive excision, the benefit/risk ratio for radiotherapy may be considered favorable. The 5-year control rates for radiotherapy range from 80% to 92%, which is lower than that of surgical excision. A randomized controlled trial by Avril et al (1997) reported that radiotherapy for basal cell carcinoma resulted in greater numbers of persistent and recurrent lesions compared with surgical excision.

When radiotherapy is used for nonmelanoma skin cancer, the primary modality is external-beam radiotherapy. A number of different brachytherapy techniques have also been developed, including low-dose rate systems, iridium-based systems, and high-dose rate systems.

### **Electronic Brachytherapy**

Electronic brachytherapy is a form of radiotherapy delivered locally, using a miniaturized electronic x-ray source rather than a radionuclide-based source. A pliable mold, constructed of silicone or polymethyl-methacrylate, is fitted to the tumor surface. This mold allows treatment to be delivered to nonflat surfaces such as the nose or ear. A radioactive source is then inserted into the mold to deliver a uniform radiation dosage directly to the lesion. Multiple treatment sessions within a short time period (typically within a month) are required.

This technique is feasible for well-circumscribed, superficial tumors because it focuses a uniform dose of x-ray source radiation on the lesion with the aid of a shielded surface application. Advantages of this treatment modality compared with standard radiotherapy include a shorter treatment schedule, avoidance of a surgical procedure and hospital stay, less severe side effects because the focused radiation spares healthy tissue and organs, and the avoidance of radioisotopes.

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

Electronic Brachytherapy for Nonmelanoma Skin Cancer

Policy # 00477

Original Effective Date: 08/19/2015

Current Effective Date: 10/12/2020

## **FDA or Other Governmental Regulatory Approval**

### **U.S. Food and Drug Administration (FDA)**

Electronic brachytherapy systems for the treatment of nonmelanoma skin cancers are designed to deliver high-dose rate brachytherapy to treat skin surface lesions. This technique focuses a uniform dose of x-ray source radiation to the lesion with the aid of a shielded surface application. The Superficial X-Ray Radiation Therapy System (Sensus Healthcare), Esteya<sup>‡</sup> Electronic Brachytherapy System (Nucletron BV), and the Xofig<sup>®‡</sup> Axxent<sup>®‡</sup> Electronic Brachytherapy System (iCAD) are systems that have been cleared for marketing by the U.S. Food and Drug Administration through the 510(k) process. U.S. Food and Drug Administration product code: JAD.

## **Rationale/Source**

Electronic brachytherapy is a form of radiotherapy designed to deliver high-dose rate radiation to treat nonmelanoma skin cancer. This technique focuses a uniform dose of x-ray source radiation to the lesion with the aid of a shielded surface application.

For individuals who have nonmelanoma skin cancer who receive electronic brachytherapy, the evidence includes a systematic review and case series. Relevant outcomes are overall survival, disease-specific survival, change in disease status, and treatment-related morbidity. No controlled trials were identified that have compared electronic brachytherapy with alternative treatment options. A 2016 systematic review of case series found local control rates ranging from 83% to 100% and recurrence rates ranging from 0% to 17%. In most studies, the recurrence rate was less than 5%. In the absence of controlled studies, conclusions cannot be drawn about the efficacy and safety of electronic brachytherapy compared with other treatments for nonmelanoma skin cancer. Controlled trials are needed in defined populations that compare electronic brachytherapy with alternatives, specifically other forms of radiotherapy or surgical approaches. The evidence is insufficient to determine the effects of the technology on health outcomes.

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Electronic Brachytherapy for Nonmelanoma Skin Cancer

Policy # 00477

Original Effective Date: 08/19/2015

Current Effective Date: 10/12/2020

### **Supplemental Information** **Practice Guidelines and Position Statements**

#### **National Comprehensive Cancer Network**

The National Comprehensive Cancer Network guidelines on basal cell carcinoma (v.1.2020) and squamous cell skin cancer (v.1.2020) both contain the following statement on electronic brachytherapy: "There is insufficient long-term efficacy and safety data to support the routine use of electronic surface brachytherapy."

#### **American Academy of Dermatology**

In 2018, the American Academy of Dermatology published guidelines on the management of basal cell carcinoma and the management of squamous cell carcinoma. Electronic brachytherapy was rated as a C recommendation, with the level of evidence of II and III. By comparison, surgery, cryosurgery, topical therapies, and photodynamic therapies are rated as A and B recommendations.

#### **U.S. Preventive Services Task Force Recommendations**

Not applicable.

#### **Medicare National Coverage**

There is no national coverage determination. In the absence of national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

#### **Ongoing and Unpublished Clinical Trials**

Some currently unpublished trials that might influence this review are listed in Table 1.

**Table 1. Summary of Key Ongoing Trials**

<b>NCT No.</b>	<b>Trial Name</b>	<b>Planned Enrollment</b>	<b>Completion Date</b>
Ongoing			
NCT03024866 <sup>a</sup>	Electronic Brachytherapy: A Multi-Center Retrospective-Prospective Matched Pairs Cohort Study to Assess Long Term Clinical Outcomes of	500	Jan 2018 (ongoing)*

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Electronic Brachytherapy for Nonmelanoma Skin Cancer

Policy # 00477

Original Effective Date: 08/19/2015

Current Effective Date: 10/12/2020

	Nonmelanoma Skin Cancer Patients Treated with eBx Compared to Nonmelanoma Skin Cancer Patients Treated with Mohs Surgery		
NCT01016899 <sup>a</sup>	Xoft Electronic Brachytherapy Clinical Protocol for the Primary Treatment of Non-Melanoma Skin Cancer	100	Feb 2018 (ongoing)**
NCT02131805	A Multicenter Pilot Study of Electronic Skin Surface Brachytherapy for Cutaneous Basal Cell and Squamous Cell Carcinoma	34	May 2021 (ongoing)***

NCT: national clinical trial.

<sup>a</sup> Denotes industry-sponsored or cosponsored trial.

\*=Last updated clinicaltrials.gov January 2017-update for 2020-results not posted (status: unknown; preliminary results published but not submitted)

\*\*=Last update posted to clinicaltrials.gov September 2017-update 2020-results not posted (status: active, not recruiting)

\*\*\*=Last update to clinicaltrials.gov March 2020 (status: recruiting)

## References

1. Blue Cross and Blue Shield Association, Medical Policy Reference Manual, “Electronic Brachytherapy for Nonmelanoma Skin Cancer”, 8.01.62, August 2020.
2. Bhatnagar A. Nonmelanoma skin cancer treated with electronic brachytherapy: results at 1 year. Brachytherapy. Mar-Apr 2013; 12(2): 134-40. PMID 23312675
3. Madan V, Lear JT, Szeimies RM. Non-melanoma skin cancer. Lancet. Feb 20 2010; 375(9715): 673-85. PMID 20171403
4. Kim JYS, Kozlow JH, Mittal B, et al. Guidelines of care for the management of basal cell carcinoma. J Am Acad Dermatol. Mar 2018; 78(3): 540-559. PMID 29331385
5. Alam M, Nanda S, Mittal BB, et al. The use of brachytherapy in the treatment of nonmelanoma skin cancer: a review. J Am Acad Dermatol. Aug 2011; 65(2): 377-388. PMID 21496952
6. Avril MF, Auperin A, Margulis A, et al. Basal cell carcinoma of the face: surgery or radiotherapy? Results of a randomized study. Br J Cancer. 1997; 76(1): 100-6. PMID 9218740

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Electronic Brachytherapy for Nonmelanoma Skin Cancer

Policy # 00477

Original Effective Date: 08/19/2015

Current Effective Date: 10/12/2020

7. Delishaj D, Rembielak A, Manfredi B, et al. Non-melanoma skin cancer treated with high-dose-rate brachytherapy: a review of literature. *J Contemp Brachytherapy*. Dec 2016; 8(6): 533-540. PMID 28115960
8. Patel R, Strimling R, Doggett S, et al. Comparison of electronic brachytherapy and Mohs micrographic surgery for the treatment of early-stage non-melanoma skin cancer: a matched pair cohort study. *J Contemp Brachytherapy*. Aug 2017; 9(4): 338-344. PMID 28951753
9. Cox JD, Stetz J, Pajak TF. Toxicity criteria of the Radiation Therapy Oncology Group (RTOG) and the European Organization for Research and Treatment of Cancer (EORTC). *Int J Radiat Oncol Biol Phys*. Mar 30 1995; 31(5): 1341-6. PMID 7713792
10. Paravati AJ, Hawkins PG, Martin AN, et al. Clinical and cosmetic outcomes in patients treated with high-dose-rate electronic brachytherapy for nonmelanoma skin cancer. *Pract Radiat Oncol*. Nov-Dec 2015; 5(6): e659-64. PMID 26432680
11. Delishaj D, Laliscia C, Manfredi B, et al. Non-melanoma skin cancer treated with high-dose-rate brachytherapy and Valencia applicator in elderly patients: a retrospective case series. *J Contemp Brachytherapy*. Dec 2015; 7(6): 437-44. PMID 26816500
12. Tormo A, Celada F, Rodriguez S, et al. Non-melanoma skin cancer treated with HDR Valencia applicator: clinical outcomes. *J Contemp Brachytherapy*. Jun 2014; 6(2): 167-72. PMID 25097557
13. Bhatnagar A, Loper A. The initial experience of electronic brachytherapy for the treatment of non-melanoma skin cancer. *Radiat Oncol*. Sep 28 2010; 5: 87. PMID 20875139
14. Gauden R, Pracy M, Avery AM, et al. HDR brachytherapy for superficial non-melanoma skin cancers. *J Med Imaging Radiat Oncol*. Apr 2013; 57(2): 212-7. PMID 23551783
15. Guix B, Finestres F, Tello J, et al. Treatment of skin carcinomas of the face by high-dose-rate brachytherapy and custom-made surface molds. *Int J Radiat Oncol Biol Phys*. Apr 01 2000; 47(1): 95-102. PMID 10758310
16. National Comprehensive Cancer Network (NCCN). NCCN Clinical Practice Guidelines in Oncology: Basal Cell Skin Cancer. Version 1.2020. [https://www.nccn.org/professionals/physician\\_gls/pdf/nmsc.pdf](https://www.nccn.org/professionals/physician_gls/pdf/nmsc.pdf).
17. National Comprehensive Cancer Network (NCCN). NCCN Clinical Practice Guidelines in Oncology: Squamous Cell Skin Cancer. Version 1.2020. [https://www.nccn.org/professionals/physician\\_gls/pdf/squamous.pdf](https://www.nccn.org/professionals/physician_gls/pdf/squamous.pdf).
18. Kim JYS, Kozlow JH, Mittal B, et al. Guidelines of care for the management of cutaneous squamous cell carcinoma. *J Am Acad Dermatol*. Mar 2018; 78(3): 560-578. PMID 29331386

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Electronic Brachytherapy for Nonmelanoma Skin Cancer

Policy # 00477

Original Effective Date: 08/19/2015

Current Effective Date: 10/12/2020

### **Policy History**

Original Effective Date: 08/19/2015

Current Effective Date: 10/12/2020

08/06/2015 Medical Policy Committee review

08/19/2015 Medical Policy Implementation Committee approval. New Policy.

01/01/2016 Coding update

08/04/2016 Medical Policy Committee review

08/17/2016 Medical Policy Implementation Committee approval. No change to coverage.

01/01/2017 Coding update: Removing ICD-9 Diagnosis Codes

09/07/2017 Medical Policy Committee review

09/20/2017 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

09/06/2018 Medical Policy Committee review

09/19/2018 Medical Policy Implementation Committee approval. Added a Policy Guidelines section with a reference to them in the investigational statement. Coverage eligibility unchanged.

09/05/2019 Medical Policy Committee review

09/11/2019 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

09/03/2020 Medical Policy Committee review

09/09/2020 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

Next Scheduled Review Date: 9/2021

### **Coding**

*The five character codes included in the Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines are obtained from Current Procedural Terminology (CPT®)‡, copyright 2019 by the American Medical Association (AMA). CPT is developed by the AMA as a listing of descriptive terms and five character identifying codes and modifiers for reporting medical services and procedures performed by physician.*

*The responsibility for the content of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines is with Blue Cross and Blue Shield of Louisiana and no endorsement by the AMA is*

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Electronic Brachytherapy for Nonmelanoma Skin Cancer

Policy # 00477

Original Effective Date: 08/19/2015

Current Effective Date: 10/12/2020

*intended or should be implied. The AMA disclaims responsibility for any consequences or liability attributable or related to any use, nonuse or interpretation of information contained in Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines. Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein. Any use of CPT outside of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines should refer to the most current Current Procedural Terminology which contains the complete and most current listing of CPT codes and descriptive terms. Applicable FARS/DFARS apply.*

CPT is a registered trademark of the American Medical Association.

Codes used to identify services associated with this policy may include (but may not be limited to) the following:

Code Type	Code
CPT	0394T, 77767, 77768
HCPCS	No codes
ICD-10 Diagnosis	All related diagnoses

\*Investigational – A medical treatment, procedure, drug, device, or biological product is Investigational if the effectiveness has not been clearly tested and it has not been incorporated into standard medical practice. Any determination we make that a medical treatment, procedure, drug, device, or biological product is Investigational will be based on a consideration of the following:

- A. Whether the medical treatment, procedure, drug, device, or biological product can be lawfully marketed without approval of the U.S. Food and Drug Administration (FDA) and whether such approval has been granted at the time the medical treatment, procedure, drug, device, or biological product is sought to be furnished; or
- B. Whether the medical treatment, procedure, drug, device, or biological product requires further studies or clinical trials to determine its maximum tolerated dose, toxicity, safety, effectiveness, or effectiveness as compared with the standard means of treatment or diagnosis, must improve health outcomes, according to the consensus of opinion among experts as shown by reliable evidence, including:

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.





# Louisiana

## Electronic Brachytherapy for Nonmelanoma Skin Cancer

Policy # 00477

Original Effective Date: 08/19/2015

Current Effective Date: 10/12/2020

1. Consultation with the Blue Cross and Blue Shield Association technology assessment program (TEC) or other nonaffiliated technology evaluation center(s);
2. Credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community; or
3. Reference to federal regulations.

‡ Indicated trademarks are the registered trademarks of their respective owners.

**NOTICE:** If the Patient's health insurance contract contains language that differs from the BCBSLA Medical Policy definition noted above, the definition in the health insurance contract will be relied upon for specific coverage determinations.

**NOTICE:** Medical Policies are scientific based opinions, provided solely for coverage and informational purposes. Medical Policies should not be construed to suggest that the Company recommends, advocates, requires, encourages, or discourages any particular treatment, procedure, or service, or any particular course of treatment, procedure, or service.

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.