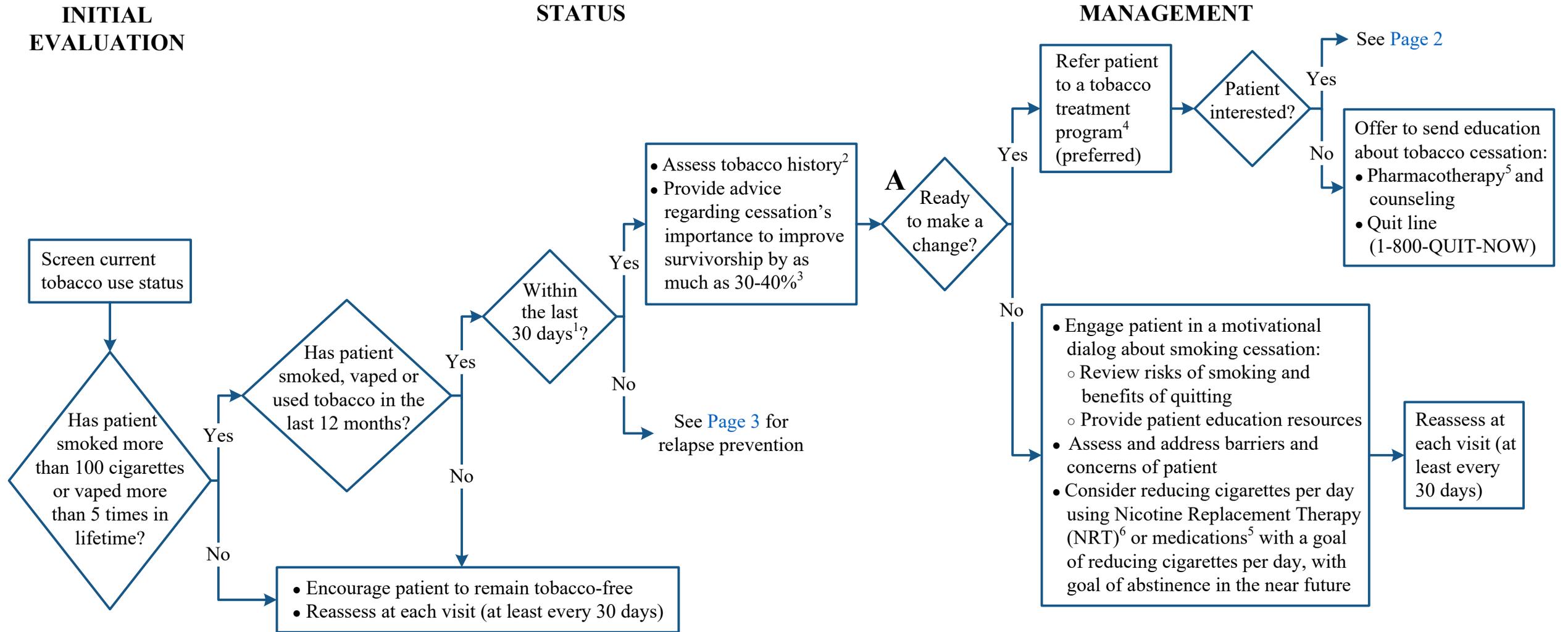


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<sup>1</sup> If patient has not smoked in the past 7 days, treatment may not be required

<sup>2</sup> Refer to [Appendix A](#) for Tobacco History Assessment

<sup>3</sup> Refer to the 2014 U.S. Surgeon General Report, see [Page 6](#)

<sup>4</sup> The tobacco treatment program provides both outpatient and inpatient services

<sup>5</sup> Refer to [Appendix B](#) for Medication Options

<sup>6</sup> Refer to [Appendix C](#) for Nicotine Replacement Therapy (NRT)

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## 1<sup>st</sup> PHARMACOTHERAPY CHOICE

## ASSESSMENT

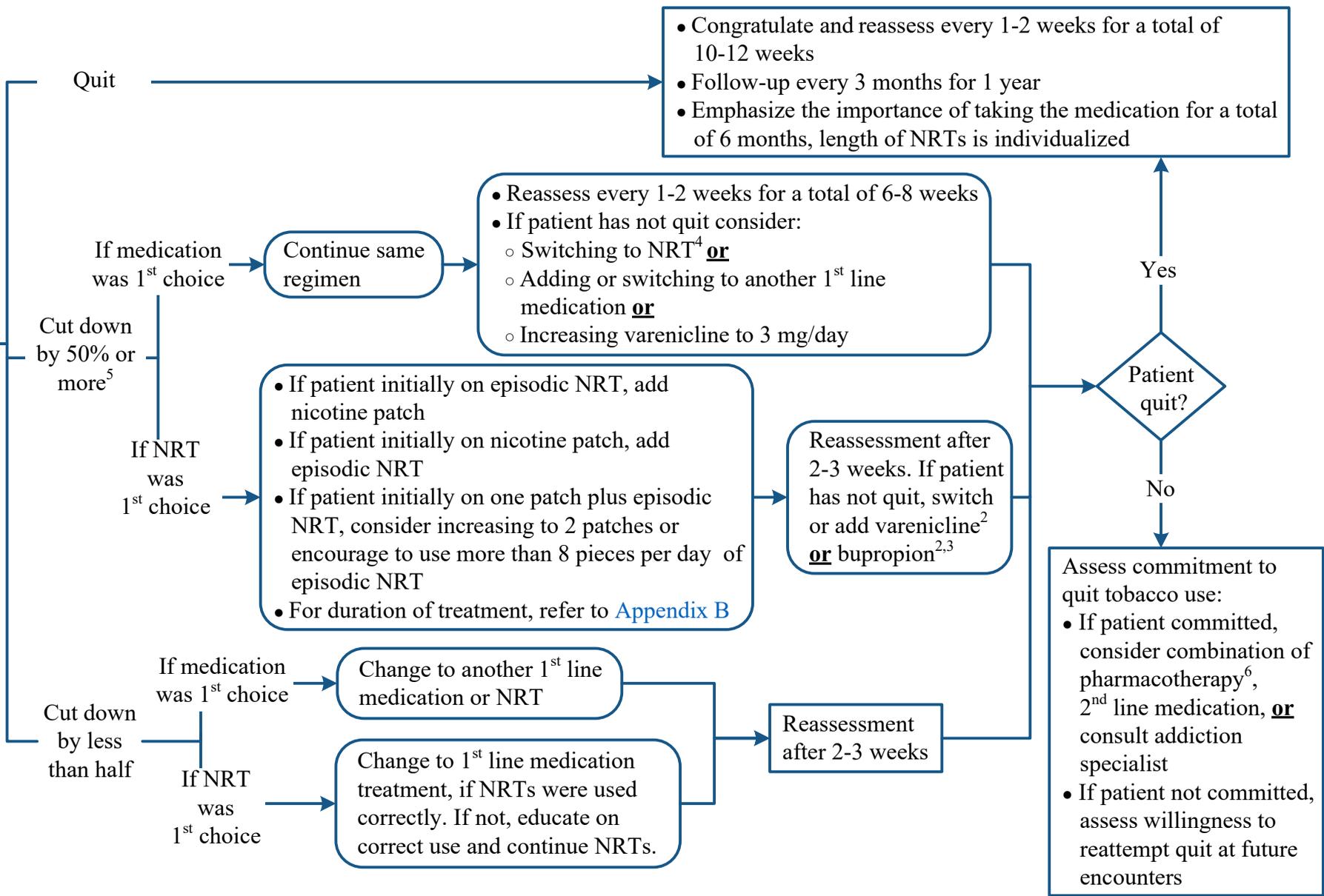
## 2<sup>nd</sup> PHARMACOTHERAPY CHOICE

## 3<sup>rd</sup> PHARMACOTHERAPY CHOICE

Components of an effective tobacco treatment plan includes behavioral therapy<sup>1</sup> with pharmacotherapy:

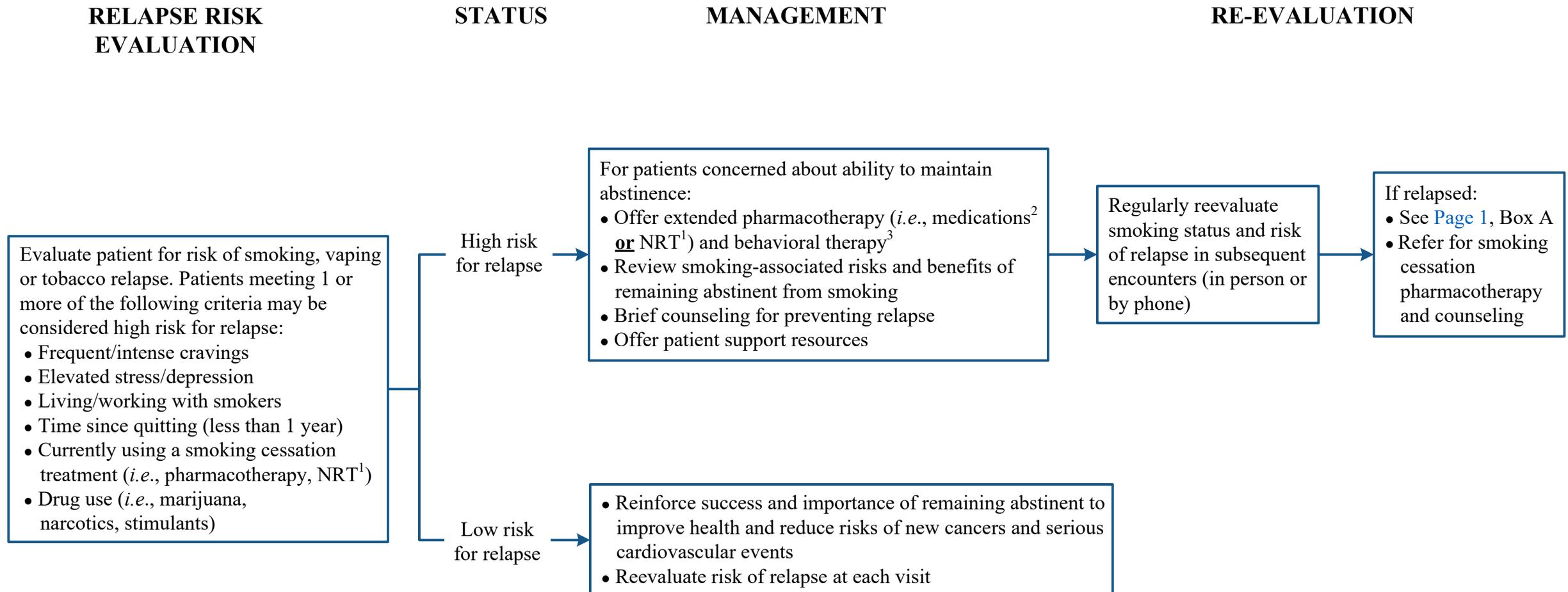
- 1<sup>st</sup> line medication options<sup>2</sup>
  - Varenicline (most effective single agent)
  - Bupropion-SR or XL<sup>3</sup>
- or**
- NRT<sup>4</sup>
  - Ideally nicotine patch plus one episodic NRT (lozenge or gum preferred)

Follow-up around 2-3 weeks to assess response to treatment



<sup>1</sup> Refer to [Appendix D](#) for Cognitive Behavioral and Motivational Intervention  
<sup>2</sup> Refer to [Appendix B](#) for Medication Options  
<sup>3</sup> Concurrent administration of bupropion and tamoxifen should be avoided. Bupropion significantly inhibits the metabolism of tamoxifen to some of its active metabolites, which may diminish the efficacy of tamoxifen.  
<sup>4</sup> Refer to [Appendix C](#) for Nicotine Replacement Therapy (NRT)  
<sup>5</sup> Cutting back by half on the number of cigarettes smoked or the amount smoked of each cigarette  
<sup>6</sup> Two 1<sup>st</sup> line medications or one medication plus NRT

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<sup>1</sup> Refer to [Appendix C](#) for Nicotine Replacement Therapy (NRT)

<sup>2</sup> Refer to [Appendix B](#) for Medication Options

<sup>3</sup> Refer to [Appendix D](#) for Cognitive Behavioral and Motivational Intervention

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**Note:** The treatment for both smokeless tobacco and/or vaping nicotine/e-cigarettes does follow the same pathway/methods as for treatment of smoking.

## APPENDIX A: Tobacco History Assessment

- **How much do you smoke per day?**  
If > 20 cigarettes, see footnote<sup>1</sup>
- **How soon do you smoke after you wake up in the morning?**  
If within 30 minutes, see footnote<sup>1</sup>
- **Do you use any other type(s) of tobacco/nicotine products and if so, how much?** (e.g., pipes, cigars, snuff, and/or e-cigarettes)
- **Do you use tobacco everyday or some days?**  
If daily, see footnote<sup>1</sup>
- **Fagerstrom Test of Cigarette Dependence (FTCD)** (optional):  
If they score 3 or higher indicates dependence on nicotine

### Document history of quit attempts in patient health record:

- What is the longest period you have gone without smoking?
- When was your last quit attempt?
- Did you use anything to help you quit in the past? If so, what?
  - Unaided
  - Medications
  - Support group
  - Behavior therapy
  - Quitlines, websites, smart phone applications, or other media
  - E-cigarettes
  - Other
- **Why were previous quit attempts unsuccessful?**  
(e.g., side effects, cost, continued cravings, did not work)
- **Engage patients in a motivational dialog about smoking cessation:**
  - Review risks of smoking and benefits of quitting
  - Provide patient education resources

<sup>1</sup> Patient has a higher likelihood of being nicotine dependent and more difficult to quit

## APPENDIX B: Medication Options

- Varenicline (Chantix<sup>®</sup>) for 12 weeks; if patient quits, then renew another 12 weeks
  - 0.5 mg for three days, then
  - 0.5 mg twice a day for 4 days, then
  - 1 mg twice a day
- Bupropion-SR<sup>2</sup> (Zyban<sup>®</sup>) for 12 weeks; if patient quits, then renew another 12 weeks
  - 150 mg daily for 3-7 days, then
  - 150 mg twice a day **or** bupropion-XL<sup>2</sup> 150 mg every morning for 3-7 days, then 300 mg every morning

<sup>2</sup> Bupropion inhibits the metabolism of tamoxifen diminishing the availability of active tamoxifen metabolites and therefore tamoxifen becomes ineffective in preventing recurrence of certain breast cancers (HR+ types)

## APPENDIX C: Nicotine Replacement Therapy<sup>3</sup> (NRT)

### Nicotine patch:

- If ≥ 5 cigarettes per day or smokes within 30 minutes of awaking:
  - 21 mg daily for 6 weeks or more
  - 14 mg daily for 2 weeks or more
  - 7 mg daily for 2 weeks or more
  - If patient quits, either stop or taper to next lower level. Minimum of 12 weeks, recommended up to 24 weeks.
- If < 5 cigarettes per day or smokes after at least 30 minutes of awaking
  - 14 mg daily for 6 weeks or more
  - 7 mg daily for 2 weeks or more
  - If patient quits, either stop or taper to 7 mg. Use for a minimum of 12 weeks; recommended for up to 24 weeks.

**Episodic NRT:** (Dosing minimum of 8 doses/day; maximum 20 doses/day. One dose every 1-2 hour(s) on a schedule for 12 weeks or more.)

- Gum or lozenges: 2 mg or 4 mg/piece (4 mg lozenge is preferred due to favorable cost, effectiveness and ease of use)
- Nasal spray: 2 squirts (1 mg) equals 1 dose (not preferred due to higher cost and difficulty of use)
- Oral inhaler: 10 mg/cartridge (20 puffs equal 1 dose) (not preferred due to higher cost and difficulty of use)

<sup>3</sup> Continuous use of NRT: There is no standard timeframe beyond 12 weeks; it is based on individual preference

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## APPENDIX D: Cognitive Behavioral and Motivational Intervention

Type of Counseling	Interventions
In-person, videoconference, and/or by phone	<ul style="list-style-type: none"> <li>• Negotiate quit date, a trial quit attempt or a scheduled reduction</li> <li>• Support cessation and build abstinence skills</li> <li>• Review educational handouts</li> <li>• Explore social support</li> <li>• Problem solving</li> <li>• Discuss medication options<sup>1</sup></li> <li>• Assessment of motivation and readiness to quit</li> <li>• Relapse prevention</li> </ul>
Related Interventions	<ul style="list-style-type: none"> <li>• Explore psychiatric symptoms</li> <li>• Cancer related distress:                             <ul style="list-style-type: none"> <li>○ Internal resources: Place of Wellness, Palliative Care, Integrative Medicine</li> <li>○ External resources: Cancer Counseling Incorporated, help locate community resources</li> <li>○ Consultation:                                     <ul style="list-style-type: none"> <li>- Psychiatrist-physician</li> <li>- APN/PA</li> </ul> </li> </ul> </li> </ul>

<sup>1</sup> Refer to [Appendix B](#) for Medication Options

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## SUGGESTED READINGS

- The 2008 PHS Guideline Update Panel, Liaisons, and Staff. (2008). Treating tobacco use and dependence: 2008 update U.S. public health service clinical practice guideline executive summary. *Respiratory Care*, 53(9), 1217-1222. Retrieved from <https://web.p.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=837269ad-38a5-4840-b3e3-0919339822b9%40redis>
- Anthenelli, R. M., Benowitz, N. L., West, R., St Aubin, L., Mcrae, T., Lawrence, D., . . . Evins, A. E. (2016). Neuropsychiatric safety and efficacy of varenicline, bupropion, and nicotine patch in smokers with and without psychiatric disorders (EAGLES): A double-blind, randomised, placebo-controlled clinical trial. *The Lancet*, 387(10037), 2507-2520. [https://doi.org/10.1016/S0140-6736\(16\)30272-0](https://doi.org/10.1016/S0140-6736(16)30272-0)
- Cahill, K., Stevens, S., Perera, R., & Lancaster, T. (2013). Pharmacological interventions for smoking cessation: An overview and network meta-analysis. *Cochrane Database of Systematic Reviews*, 5, CD009329. <https://doi.org/10.1002/14651858.CD009329.pub2>
- Cinciripini, P. M., Karam-Hage, M., Kypriotakis, G., Robinson, J. D., Rabiun, V., Beneventi, D., . . . Blalock, J. A. (2019). Association of a comprehensive smoking cessation program with smoking abstinence among patients with cancer. *JAMA Network Open*, 2(9), e1912251. <https://doi.org/10.1001/jamanetworkopen.2019.12251>
- Day, A. T., Dahlstrom, K. R., Lee, R., Karam-Hage, M., & Sturgis, E. M. (2020). Impact of a tobacco treatment program on abstinence and survival rates among current smokers with head and neck squamous cell carcinoma. *Head & Neck*, 42(9), 2440-2452. <https://doi.org/10.1002/hed.26268>
- Heatherton, T. F., Kozlowski, L. T., Frecker, R. C., & Fagerstrom, K. O. (1991). The Fagerström test for nicotine dependence: A revision of the Fagerstrom tolerance questionnaire. *British Journal of Addiction*, 86(9), 1119-1127. <https://doi.org/10.1111/j.1360-0443.1991.tb01879.x>
- Karam-Hage, M., Cinciripini, P. M., & Gritz, E. R. (2014). Tobacco use and cessation for cancer survivors: An overview for clinicians. *CA: A Cancer Journal for Clinicians*, 64(4), 272-290. <https://doi.org/10.3322/caac.21231>
- Karam-Hage, M., Kypriotakis, G., Robinson, J. D., Green, C. E., Mann, G., Rabiun, V., . . . Cinciripini, P. M. (2018). Improvement of smoking abstinence rates with increased varenicline dosage: A propensity score-matched analysis. *Journal of Clinical Psychopharmacology*, 38(1), 34-41. <https://doi.org/10.1097/JCP.0000000000000829>
- Karam-Hage, M., Oughli, H. A., Rabiun, V., Beneventi, D., Wippold, R. C., Blalock, J. A., & Cinciripini, P. M. (2016). Tobacco cessation treatment pathways for patients with cancer: 10 years in the making. *Journal of the National Comprehensive Cancer Network*, 14(11), 1469-1477. <https://doi.org/10.6004/jnccn.2016.0153>
- Mills, E. J., Wu, P., Lockhart, I., Thorlund, K., Puhan, M., & Ebbert, J. O. (2012). Comparisons of high-dose and combination nicotine replacement therapy, varenicline, and bupropion for smoking cessation: A systematic review and multiple treatment meta-analysis. *Annals of Medicine*, 44(6), 588-597. <https://doi.org/10.3109/07853890.2012.705016>

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## SUGGESTED READINGS - continued

- National Center for Chronic Disease Prevention and Health Promotion (US) Office on Smoking and Health. (2014). The health consequences of smoking-50 years of progress: A report of the Surgeon General. Centers for Disease Control and Prevention (US). Retrieved from [https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf\\_NBK179276.pdf](https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf)
- National Comprehensive Cancer Network. (2023). *Smoking Cessation* (NCCN Guidelines Version 3.2022). Retrieved from [https://www.nccn.org/professionals/physician\\_gls/pdf/smoking.pdf](https://www.nccn.org/professionals/physician_gls/pdf/smoking.pdf)
- Rose, J. E., & Behm, F. M. (2013). Adapting smoking cessation treatment according to initial response to precessation nicotine patch. *The American Journal of Psychiatry*, 170(8), 860-867. <https://doi.org/10.1176/appi.ajp.2013.12070919>
- Singareeka Raghavendra, A., Kypriotakis, G., Karam-Hage, M., Kim, S., Jizzini, M., Seoudy, K. S., . . . Ibrahim, N. K. (2022). The impact of treatment for smoking on breast cancer patients' survival. *Cancers*, 14(6), 1464. <https://doi.org/10.3390/cancers14061464>
- Wippold, R., Karam-Hage, M., Blalock, J., & Cinciripini, P. (2015). Selection of optimal tobacco cessation medication treatment in patients with cancer. *Clinical Journal of Oncology Nursing*, 19(2), 170-175. <https://doi.org/10.1188/15.CJON.170-175>

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## DEVELOPMENT CREDITS

This screening algorithm is based on majority expert opinion of the Tobacco Cessation workgroup at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

### Core Development Team Leads

Therese Bevers, MD (Cancer Prevention)  
Maher Karam-Hage, MD (Behavioral Science - Clinical)

### Workgroup Members

Heather Alexander Dahl, PgDip, BA (Community Alliances)  
Diane Beneventi, PhD (Behavioral Science - Clinical)  
Jan Blalock, PhD (Behavioral Science)  
Paul Cinciripini, PhD, MS (Behavioral Science)  
Mark Evans, MSW, LCSW (Behavioral Science)  
Wendy Garcia, BS♦  
Ernest Hawk, MD, MPH (Cancer Prevention)  
Nancy Huang, MA, LPC (Behavioral Science)  
Sheila Kitaka, PAC (Behavioral Science - Clinical)  
Melissa Macomber, MA, LPC (Behavioral Science)  
James Staley, MA, LPC (Behavioral Science)  
Priya Thomas, MD (Cancer Prevention)  
Hannah Warr, MSN, CPHON♦  
Leann Witmer, MA, LPC-S (Behavioral Science)

♦Clinical Effectiveness Development Team