

Tobacco and Nicotine Dependence Treatment Curriculum for DNP Program

A Summary of a Practice-Improvement Project
Incorporating an Evidence-Based Tobacco and
Nicotine Dependence Treatment Curriculum
Into a Doctor of Nursing Practice Program



NDSU NORTH DAKOTA
STATE UNIVERSITY

About This Tool

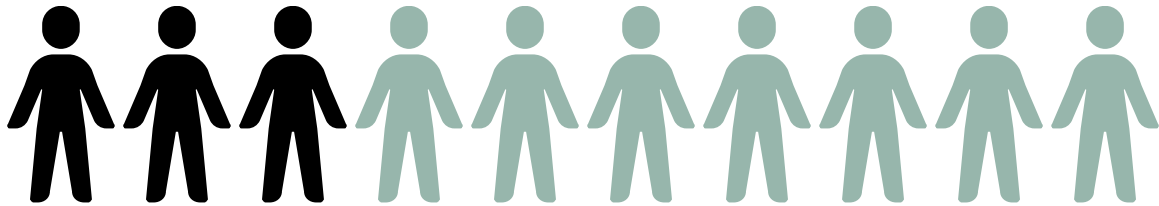
This tool is based on a 2022 practice-improvement project incorporating an evidence-based tobacco and nicotine dependence treatment curriculum into North Dakota State University's (NDSU) Doctor of Nursing Practice (DNP) program. This tool is intended as a guide for educational institutions or providers to incorporate into their curriculums to improve provider competencies and patient outcomes.

After completion of the tool, the students' (a) motivation and confidence in helping people quit tobacco and (b) comfort with providing information about cessation medications, programs and services, and referrals for evidence-based tobacco cessation **increased dramatically** from pre-education to 2.5 months post-education for all questions.

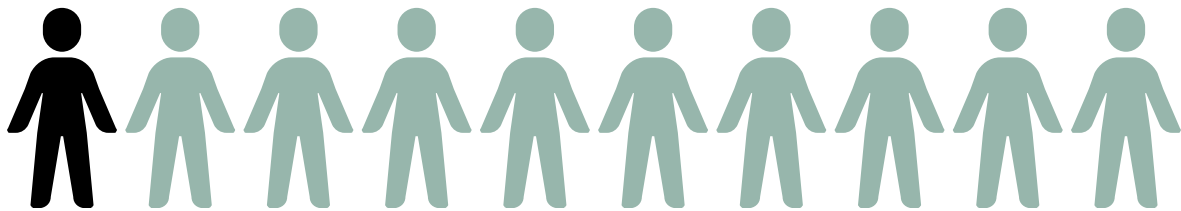
Because of the high volume of tobacco users seeing a primary care provider annually, along with available evidence-based tobacco cessation treatments, having primary care providers who are knowledgeable and skilled in tobacco cessation treatments is essential to curb the tobacco epidemic.

Tobacco use is a global epidemic and is one of the biggest public health threats the world has ever faced, killing over 8 million people a year.¹

Unfortunately, only 31% of those who tried to quit smoking in 2015 used evidenced-based cessation treatments,



and only 7.4% of them were successful in quitting.²



When behavioral counseling and pharmacotherapy are combined, cessation rates increase by 82%.³

Because 70% of tobacco users visit a primary care facility annually, it is essential that providers are able to appropriately and accurately address tobacco use and cessation.^{4,5}



Brief Outline of Education

Part 1

Students completed online modules from Rx for Change: Behavioral Counseling and Pharmacotherapy



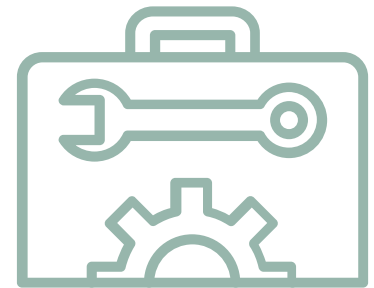
Part 2

In-person presentation review and virtual patients



Part 3

A 12-page toolkit was provided to students to assist in reducing nicotine dependence and providing treatment



This tool is a brief summary of the practice-improvement project completed by Jillian Doan, DNP-FNP-C, for her requirements in the NDSU DNP program.

To obtain more information about this project, including a review of literature, methods, and analysis, you can view the published dissertation in its entirety in the NDSU Repository. <https://hdl.handle.net/10365/33238>

Part 1 Rx for Change

Rx for Change: Clinician-Assisted Tobacco Cessation is a program designed by Purdue College of Pharmacy created to educate clinicians about the negative health effects of tobacco use and enhance providers' knowledge about delivering comprehensive tobacco cessation counseling services.⁶

Rx for Change: Behavioral Counseling and Pharmacotherapy free online modules

Register for free at : https://www.eventreg.purdue.edu/ec2k/courselisting.aspx?1=%20&master_ID=6318%20&course_area=1598%20&course_number=168%20&course_subtitle=00

Module 1: Clinician-Assisted Tobacco Cessation (30 minutes)

Key concepts covered in Module 1 included: the epidemiology of tobacco; tobacco use prevalence; components of tobacco smoke; morbidity, mortality, and health complications associated with tobacco; smoking cessation benefits; principles of nicotine addiction; nicotine pharmacodynamics; nicotine withdrawal; and drug interactions with smoking.

Module 2: Assisting Patients to Quit (56 minutes)

Key concepts covered in Module 2 included the 5 A's (Ask, Advise, Assess, Assist, Arrange), assessing readiness to quit through the Transtheoretical Model, stress, withdrawal, weight gain, triggers, quit day, tobacco use log, cognitive and behavioral strategies, and quitlines. Module 2 also provided practical language cues to use in patient interactions.

Module 3: Cessation Aids (52 minutes)

Key concepts covered in Module 3 included aspects of the medications that are needed to safely prescribe or recommend them to a patient such as the mechanism of action, indications, side effects, contraindications, pharmacokinetics, dosing, and effectiveness.

Rx for Change is free of charge, easily accessible, updated frequently to include evidence-based practices, and has undergone external review from key experts in the field. It is an advantageous and practical program to implement.

Part 2

In-Person Presentation

Approximately 90 minutes

1

Presentation reviewed:

- Tobacco use prevalence
- Health effects of tobacco
- FDA-approved pharmacotherapy for tobacco treatment
- North Dakota-specific resources for tobacco cessation
- Coding and billing for tobacco cessation in primary care

2

Brief video (19 minutes) discussing electronic nicotine delivery system (ENDS) use

3

Tobacco cessation virtual patients that require participation to practice motivational interviewing with people who use tobacco

Both the ENDS video and virtual patients presented were created by Rx for Change.

1. The presentation slides with speaker notes can be found here:

https://docs.google.com/presentation/d/1I3ufTXBsyRhM7Dq3G4XYoXWL6WDF4XBtSJE6oFu_tI/edit?usp=sharing.

2. Access to the ENDS video available upon request.

3. Link to virtual patients: <https://rxforchange.ucsf.edu/virtualrx.php> (create a free account with Rx for Change).

Part 3

Toolkit for Providers

5 A's tobacco cessation counseling guide sheet⁶

Cognitive and behavioral strategies to cope with quitting⁶

Withdrawal symptom information sheet⁶

Fagerstrom test for nicotine dependence⁷

NDQuits information⁸

Billing and coding for tobacco cessation in primary care⁹

Pharmacologic product guide⁶

Drug interactions with tobacco smoke⁶

Permission was obtained from Rx For Change and the North Dakota Department of Health and Human Services to include various items in the toolkit.



5 A's Tobacco Cessation Counseling Guide Sheet

STEP One: ASK about Tobacco Use

➤ Suggested Dialogue

- ✓ Do you ever smoke or use other types of tobacco or nicotine, such as e-cigarettes?
 - I take time to talk with all of my patients about tobacco use—because it's important.
- ✓ Condition X often is caused or worsened by exposure to tobacco smoke. Do you, or does someone in your household smoke?
- ✓ Medication X often is used for conditions linked with or caused by smoking. Do you, or does someone in your household smoke?

STEP Two: ADVISE to Quit

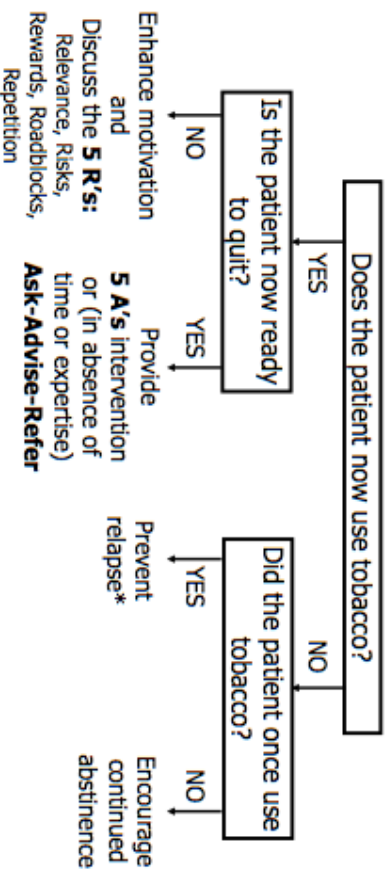
➤ Suggested Dialogue

- Quitting is the most important thing you can do to protect your health now and in the future. I have training to help my patients quit, and when you are ready I would be more than happy to work with you to design a treatment plan.
- Prior to imparting advice, consider asking the patient for permission to do so – e.g., “May I tell you why this concerns me?” [then elaborate on patient-specific concerns]

STEP Three: ASSESS Readiness to Quit

➤ Suggested Dialogue

- For current tobacco users: What are your thoughts about quitting? Might you consider quitting sometime in the next month?



* Relapse prevention interventions are not necessary if patient has not used tobacco for many years and is not at risk for re-initiation.

Flore MC, Jahn CR, Baker TB, et al. *Treating Tobacco Use and Dependence: 2008 Update*. Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services; Public Health Service; May 2008.

STEP Four: ASSIST with Quitting

✓ Assess Tobacco Use History

- Current use: type(s) of tobacco, amount, time to first cigarette
- Past use:
 - Duration of tobacco use
 - Recent changes in levels of use
 - Past quit attempts:
 - Number of attempts, date of most recent attempt, duration
 - Methods used previously—What did or didn't work? Why or why not?
 - Prior medication administration, dose, adherence, duration of treatment
 - Reasons for relapse



✓ Discuss Key Issues (for the upcoming or current quit attempt)

- Reasons/motivation for wanting to quit (or avoid relapse)
- Confidence in ability to quit (or avoid relapse)
- Triggers for tobacco use
- Routines and situations associated with tobacco use
- Stress-related tobacco use
- Concerns about weight gain
- Concerns about withdrawal symptoms

✓ Facilitate Quitting Process

- Discuss methods for quitting: pros and cons of the different methods
- Set a quit date: ideally, less than 2 weeks away
- Recommend Tobacco Use Log
- Discuss coping strategies (cognitive, behavioral)
- Discuss withdrawal symptoms
- Discuss concept of “slip” versus relapse
- Provide medication counseling: adherence, proper use, with demonstration
- Offer to assist throughout the quit attempt

✓ Evaluate the Quit Attempt (at follow-up)

- Status of attempt and engagement in quitting program; “slips” and relapse
- Medication compliance, extent to which nicotine withdrawal is being alleviated with current regimen, and plans for discontinuation of medication(s)

STEP Five: ARRANGE Follow-up Counseling

- ✓ Monitor patients' progress throughout the quit attempt. Follow-up contact should occur during the first week after quitting. A second follow-up contact is recommended in the first month. Additional contacts should be scheduled as needed. Counseling contacts can occur face-to-face, by telephone, or by e-mail. Keep patient progress notes.
- ✓ Address temptations and triggers; discuss strategies to prevent relapse.
- ✓ Congratulate patients for success and reinforce need for continued support.

Cognitive and Behavioral Strategies to Cope with Quitting



COPING WITH QUITTING: COGNITIVE AND BEHAVIORAL STRATEGIES

<p>COGNITIVE STRATEGIES focus on retraining the way a patient thinks. Often, patients will deliberate on the fact that they are thinking about a cigarette, and this leads to relapse. Patients must recognize that thinking about a cigarette doesn't mean they need to have one.</p>	
REVIEW COMMITMENT TO QUIT	Each morning, say, "I am proud that I made it through another day without tobacco!" Remind oneself that cravings and temptations are temporary and will pass. Announce, either silently or aloud, "I am a nonsmoker, and the temptation will pass."
DISTRACTIVE THINKING	Use deliberate, immediate refocusing of thinking toward other thoughts when cued by thoughts about tobacco use.
POSITIVE SELF-TALKS, PEP TALKS	Say, "I can do this," and remind oneself of previous difficult situations in which tobacco use was avoided.
RELAXATION THROUGH IMAGERY	Center mind toward positive, relaxing thoughts.
MENTAL REHEARSAL, VISUALIZATION	Prepare for situations that might arise by envisioning how best to handle them. For example, envision what would happen if offered a cigarette by a friend—mentally craft and rehearse a response, and perhaps even practice it by saying it aloud.
<p>BEHAVIORAL STRATEGIES involve specific actions to reduce risk for relapse. These strategies should be considered prior to quitting, after determining patient-specific triggers and routines or situations associated with tobacco use. Below are strategies for several of the more common cues or causes for relapse.</p>	
STRESS	Anticipate upcoming challenges at work, at school, or in personal life. Develop a substitute plan for tobacco use during times of stress (e.g., use deep breathing, take a break or leave the situation, call a supportive friend or family member, use nicotine replacement therapy).
ALCOHOL	<i>Drinking alcohol can lead to relapse.</i> Consider limiting or abstaining from alcohol during the early stages of quitting.
OTHER TOBACCO USERS	<i>Quitting is more difficult if the patient is around other tobacco users. This is especially difficult if another tobacco user is in the household.</i> During the early stages of quitting, limit prolonged contact with individuals who are using tobacco. Ask co-workers, friends, and housemates not to smoke or use tobacco in your presence.
ORAL GRATIFICATION NEEDS	Have nontobacco oral substitutes (e.g., gum, sugarless candy, straws, toothpicks, lip balm, toothbrush, nicotine replacement therapy, bottled water) readily available.
AUTOMATIC SMOKING ROUTINES	Anticipate routines associated with tobacco use and develop an alternative plan. Examples: MORNING COFFEE: change morning routine, take shower before drinking coffee, drink tea instead of coffee, take a brisk walk shortly after awakening. WHILE DRIVING: remove all tobacco from car, have car interior detailed, listen to an audio book or talk radio, use oral substitutes. WHILE ON THE PHONE: stand while talking, limit call duration, change phone location, keep hands occupied by doodling or sketching. WHILE WATCHING TV: sit in a different chair, rearrange furniture, consider watching in a different room, keep hands busy by squeezing a stress ball. AFTER MEALS: get up and immediately do dishes or take a brisk walk after eating, brush teeth, call supportive friend.
POST-CESSATION WEIGHT GAIN	Do not attempt to modify multiple behaviors at one time. If weight gain is a barrier to quitting, engage in regular physical activity and adhere to a healthful diet (as opposed to strict dieting). Carefully plan and prepare meals, increase fruit and water intake to create a feeling of fullness, and chew sugarless gum or eat sugarless candies. Consider use of pharmacotherapy shown to delay weight gain.
CRAVINGS FOR TOBACCO	Cravings for tobacco are temporary and usually pass within 5–10 minutes. Handle cravings through distractive thinking, take a break, do something else, take deep breaths.

Withdraw Symptom Information Sheet



WITHDRAWAL SYMPTOMS INFORMATION SHEET

Quitting tobacco use brings about a variety of physical and psychological withdrawal symptoms. For some people, coping with withdrawal symptoms is like riding a roller coaster—there can be sharp turns, slow climbs, and unexpected plunges. **Most symptoms begin within the first 1 to 2 days, peak within the first week, and subside within 2 to 4 weeks.** Report new symptoms to your health-care provider, especially if severe. Consider the impact of recent medication changes and your caffeine intake.

SYMPTOM	CAUSE	DURATION	RELIEF
Chest tightness	Tightness is likely due to tension created by the body's need for nicotine or may be caused by sore muscles from coughing.	A few days	<ul style="list-style-type: none"> Use relaxation techniques Try deep breathing Use of a nicotine medication might help
Constipation, stomach pain, gas	Intestinal movement decreases for a brief period.	1–2 weeks	<ul style="list-style-type: none"> Drink plenty of fluids Add fruits, vegetables, and whole-grain cereals to diet
Cough, dry throat, nasal drip	The body is getting rid of mucus, which has blocked airways and restricted breathing.	A few days	<ul style="list-style-type: none"> Drink plenty of fluids Avoid additional stress during first few weeks
Craving for a cigarette	Nicotine is a strongly addictive drug, and withdrawal causes cravings.	Frequent for 2–3 days; can happen for months or years	<ul style="list-style-type: none"> Wait out the urge, which lasts only a few minutes Distract yourself Exercise (take walks) Use of a nicotine medication might help
Depressed mood	It is normal to feel sad for a period of time after you first quit smoking. Many people have a strong urge to smoke when they feel depressed.	1–2 weeks	<ul style="list-style-type: none"> Increase pleasurable activities Talk with your clinician about changes in your mood when quitting Get extra support from friends and family
Difficulty concentrating	The body needs time to adjust to not having constant stimulation from nicotine.	A few weeks	<ul style="list-style-type: none"> Plan workload accordingly Avoid additional stress during first few weeks
Dizziness	The body is getting extra oxygen.	1–2 days	<ul style="list-style-type: none"> Use extra caution Change positions slowly
Fatigue	Nicotine is a stimulant.	2–4 weeks	<ul style="list-style-type: none"> Take naps Do not push yourself Use of a nicotine medication might help
Hunger	Cravings for a cigarette can be confused with hunger pangs; sensation may result from oral cravings or the desire for something in the mouth.	Up to several weeks	<ul style="list-style-type: none"> Drink water or low-calorie liquids Be prepared with low-calorie snacks
Insomnia	Nicotine affects brain wave function and influences sleep patterns; coughing and dreams about smoking are common.	1 week	<ul style="list-style-type: none"> Reduce caffeine intake by about half (and none after lunchtime, to improve sleep), because its effects will increase with quitting smoking Use relaxation techniques
Irritability	The body's craving for nicotine can produce irritability.	2–4 weeks	<ul style="list-style-type: none"> Take walks Try hot baths Use relaxation techniques

Adapted from materials from the National Cancer Institute.

Fagerstrom Test for Nicotine Dependence



FAGERSTRÖM TEST FOR NICOTINE DEPENDENCE (ADULTS)

1. How soon after you wake up do you smoke your first cigarette? Score
- Within 5 minutes..... 3
- 6–30 minutes 2
- 31–60 minutes 1
- After 60 minutes 0
2. Do you find it difficult to refrain from smoking in the places where it is forbidden (e.g., in church, at the library, in cinema)?
- Yes 1
- No 0
3. Which cigarette would you hate most to give up?
- The first one in the morning 1
- Any other 0
4. How many cigarettes/day do you smoke?
- 10 or less 0
- 11–20 1
- 21–30 2
- 31 or more 3
5. Do you smoke more frequently during the first hours after waking than during the rest of the day?
- Yes 1
- No 0
6. Do you smoke if you are so ill that you are in bed most of the day?
- Yes 1
- No 0

Total Score:

Score of: 1-2=low dependence 5-7= moderate dependence
 3-4= low to moderate dependence 8 + = high dependence

Heatherton TF, Kozlowski LT, Frecker RC, Fagerström K-O. The Fagerström Test for Nicotine Dependence: a revision of the Fagerström Tolerance Questionnaire. *Br J Addict* 1991;86:1119–1127.

ND Quits and Medicaid

Utilizing NDQuits and ND Medicaid

The 2020 U.S. Surgeon General Report (SGR) on Smoking Cessation states that **cessation medications and behavioral counseling are severely underutilized.**

The SGR reports that 40% of patients are not advised by healthcare providers to quit tobacco. In North Dakota, that percentage is **49%.**[^]

[^]2019 ND Adult Tobacco Survey

ASK

Screen for tobacco use - including vaping and synthetic nicotine - **every visit, every time.**

ADVISE

"Quitting [type of tobacco] is one of the most important things you can do to improve your health."

REFER & CONNECT

A proactive referral reduces the barrier for the patient to connect with cessation resources.

- ◆ Tobacco Treatment Specialist (TTS)
- ◆ Local Public Health Unit
- ◆ NDQuits

PRESCRIBE

Order cessation medications, including over-the-counter meds because the motivation to quit changes. Having the prescription assists patients when they are ready and reduces the barrier of making another appointment. Insurances may cover medications.

TOBACCO CESSATION COUNSELING COVERAGE EXPANDS TO ALL ND MEDICAID MEMBERS

- ◆ ND Medicaid will now cover tobacco cessation counseling for all members for dates of services on or after January 1, 2022.
- ◆ If an ND Medicaid member has primary health care coverage through another payer, the primary payer must be billed first.
- ◆ Counseling must be provided face-to-face by or under the supervision of a physician or other health care professional who is legally authorized to furnish such services under state law and within their scope of practice and is enrolled as a ND Medicaid provider.
 - ◇ CPT Code 99406 - Smoking and tobacco cessation counseling visit; intermediate, greater than three minutes up to 10 minutes.
 - ◇ CPT Code 99407 - Smoking and tobacco cessation counseling visit;

NDQuits is a **free** phone and online cessation resource.

- ◆ Nicotine replacement therapy (NRT) is available to those who are uninsured or underinsured. Underinsured is having insurance, but the NRT is not covered.
- ◆ Specialized protocols for priority populations:
 - ◇ Pregnancy Postpartum Program
 - ◇ American Indian Commercial Tobacco Program
 - ◇ My Life My Quit is for those under age 18 and is an online, e-chat, and texting program. Text or call 1-855-891-9989 or short code to text is 36072.
- ◆ 1-800-QUIT-NOW or ndquits.health.nd.gov
- ◆ 30-day quit rate for fiscal year 2021 was 32.8%. The national benchmark is 30%.

PHARMACOTHERAPY COVERED BY ND MEDICAID

- ◆ Providers write prescriptions for cessation medications, including over-the-counter medications.
- ◆ Patients receive the medications from their pharmacy. Patients must be compliant with treatment.
 - ⇒ Varenicline and nicotine patch are allowed for 12 weeks every 6 months *when used consecutively*^{*}. Either medication is allowed with all other products.
 - ⇒ Varenicline treatment can be extended to 24 weeks of continuous treatment if patient is abstinent and uses the medication consecutively.^{*}
 - ⇒ Bupropion is allowed for 90 days every 6 months *when used consecutively*^{*} and is allowed with all other products.
 - ⇒ Nicotine gum, lozenge, inhaler, and spray are allowed for 90 days every 6 months *when used consecutively*^{*}. Any short-term medication **must** be prescribed with nicotine patch, varenicline, or bupropion.

^{*}No delay in refills

ND Quits and Medicaid cont.

ASK

Tobacco and nicotine use assessment.
Have you used any of these products within the last 30 days? [30 days denotes current use]

Cigarettes Smokeless or chewing tobacco
 Cigar Electronic nicotine devices
 Pipe Synthetic nicotine pouches
 Hookah

(Check all that apply)

NO (done!)

YES

Quitting [type of product] is one of the most important things you can do to improve your health...

...and reduce your stress, anxiety, and depression (behavioral health).
 ...and to control your blood sugars better (prediabetic or diabetic).
 ...and to reduce the need for your rescue medications (respiratory conditions).
 ...and reduce your blood pressure and heart rate (cardiac).
 ...and improve healing and pain management (surgical).

ADVISE

Are you willing to give quitting a try?

YES
(Consent)

NO

Are you willing to cut down?

YES

NO

We'll be here to help you develop a Quit Plan when you're willing to try.

I We are going to refer you to our tobacco treatment specialist (TTS) who can help you develop a quit plan to improve your chance of success. The TTS will discuss your triggers and ways to avoid those situations as well as coping skills to get through cravings or symptoms of withdrawal. Using cessation medications reduces withdrawal symptoms.

N With a quit plan and cessation medications, you can more than double your chances of successfully quitting.

E This is why it is so important you complete this appointment. [Proactively refer the patient.]

REFER/
CONNECT

N The state quitline has tobacco treatment specialists (TTS) who can help you develop a quit plan to improve your chance of success. The quitline's protocol is setting a quit date within 30 days. The TTS will discuss your triggers and ways to avoid those situations, as well as coping skills to get through cravings or symptoms of withdrawal. Using cessation medications reduces withdrawal symptoms.

U With a quit plan and cessation medications, you can more than double your chances of successfully quitting.

I If you don't have insurance or your insurance doesn't cover cessation medications, NDQuits can provide eight weeks of nicotine replacement therapy (nicotine patch, gum, lozenge) to assist your quit attempt.

S We want to connect you with NDQuits. Are we able to send that referral for help quitting? [Obtain consent and complete a referral.]

•NDQuits attempts to contact a participant three times at various times of day and different days of the week. If the patient is unreachable, the patient would need to engage NDQuits.

•First call is longer because NDQuits collects tobacco use and health history.

•NDQuits offers five plus counseling calls available with the general program.

Many people don't answer unknown calls. Tell patients the NDQuits number on Caller ID is 866-388-7848.

Billing and Coding for Tobacco Cessation in Primary Care

E/M Code

Description

99406	Smoking and tobacco use cessation counseling visit; intermediate, greater than 3 minutes up to 10 minutes
99407	Smoking and tobacco use cessation counseling visit; intermediate, greater than 10 minutes

Diagnosis Codes allowed for 99406/99407:

When billing for these services providers must use an ICD-10 F17 code or a Z code. The F codes are used if the patient is dependent on tobacco. The Z codes are used if there is not dependence on tobacco. The Z codes cannot be combined with an F17 code.

F Codes

ICD-10
 Diagnosis Code Description: all with nicotine dependence

F17.200*	Product unspecified, uncomplicated
F17.201*	Product unspecified, in remission
F17.203	Product unspecified, with withdrawal
F17.208	Product unspecified, with other nicotine-induced disorders
F17.209	Product unspecified, with unspecified nicotine-induced disorders
F17.210*	Cigarettes, uncomplicated
F17.211*	Cigarettes, in remission
F17.213	Cigarettes, with withdrawal
F17.218	Cigarettes, with other nicotine-induced disorders
F17.219	Cigarettes, with unspecified nicotine-induced disorders
F17.220*	Chewing tobacco, uncomplicated
F17.221*	Chewing tobacco, in remission
F17.223	Chewing tobacco, with withdrawal
F17.228	Chewing tobacco, with other nicotine-induced disorders
F17.229	Chewing tobacco, with unspecified nicotine-induced disorders

F17.290*	Other tobacco product, uncomplicated
F17.291*	Other tobacco product, in remission
F17.293	Other tobacco product, with withdrawal
F17.298	Other tobacco product, with other nicotine-induced disorders
F17.299	Other tobacco product, with unspecified nicotine-induced disorders

Z Codes

ICD-10
Diagnosis
Code

Description: all with nicotine dependence

Z57.31	Occupational exposure to environmental tobacco smoke <ul style="list-style-type: none"> • May not be used with Z77.22 exposure to environmental smoke
Z77.22	Contact with and suspected exposure to environmental smoke <ul style="list-style-type: none"> • May not be used with a F17.2 tobacco dependence or Z72 tobacco use code.
Z71.6	Counseling and Medicaid Advice – tobacco abuse counseling
Z72.0	Problems Related to Lifestyle and tobacco use not otherwise specified
Z87.891	Personal history of nicotine dependence <ul style="list-style-type: none"> • May not be used with F17.2 current nicotine dependence code.
Z13.89	Encounter for screening for other disorder. Use for tobacco use screening.

The preventative counseling codes, **99406** and **99407**, can be billed along with an evaluation and management (E/M) code such as **99213** and **99214**.

Pharmacologic Product Guide



Rx for Change

PHARMACOLOGIC PRODUCT GUIDE: FDA-APPROVED MEDICATIONS FOR SMOKING CESSATION

NICOTINE REPLACEMENT THERAPY (NRT) FORMULATIONS		BUPROPION SR		VARENICLINE		
GUM	LOZENGE	TRANSDERMAL PATCH	NASAL SPRAY	ORAL INHALER		
<p>Nicorette¹, Generic OTC 2 mg, 4 mg original, cinnamon, fruit, mint (various)</p>	<p>Nicorette¹, Generic Nicorette¹, Mini OTC 2 mg, 4 mg; cinnamon, cherry, mint</p>	<p>Habitrol², Nicoderm CQ¹, Generic OTC 7 mg, 14 mg, 21 mg (24-hr release)</p>	<p>Nicotrol NS³ Rx Metered spray 10 mg/mL nicotine solution</p>	<p>Nicotrol Inhaler² Rx 10 mg cartridge delivers 4 mg inhaled vapor</p>	<p>Generic (formerly Zyban) Rx 150 mg sustained-release tablet</p>	<p>Chantix³ Rx 0.5 mg, 1 mg tablet</p>
<p>■ Recent (≤ 2 weeks) myocardial infarction</p> <p>■ Serious underlying arrhythmias</p> <p>■ Serious or worsening angina pectoris</p> <p>■ Temporomandibular joint disease</p> <p>■ Pregnancy⁴ and breastfeeding</p> <p>■ Adolescents (<18 years)</p>	<p>■ Recent (≤ 2 weeks) myocardial infarction</p> <p>■ Serious underlying arrhythmias</p> <p>■ Serious or worsening angina pectoris</p> <p>■ Pregnancy⁴ and breastfeeding</p> <p>■ Adolescents (<18 years)</p>	<p>■ Recent (≤ 2 weeks) myocardial infarction</p> <p>■ Serious underlying arrhythmias</p> <p>■ Serious or worsening angina pectoris</p> <p>■ Pregnancy⁴ and breastfeeding</p> <p>■ Adolescents (<18 years)</p>	<p>■ Recent (≤ 2 weeks) myocardial infarction</p> <p>■ Serious underlying arrhythmias</p> <p>■ Serious or worsening angina pectoris</p> <p>■ Underlying chronic nasal disorders (rhinitis, nasal poly/s, sinusitis)</p> <p>■ Severe reactive airway disease</p> <p>■ Pregnancy⁴ and breastfeeding</p> <p>■ Adolescents (<18 years)</p>	<p>■ Recent (≤ 2 weeks) myocardial infarction</p> <p>■ Serious underlying arrhythmias</p> <p>■ Serious or worsening angina pectoris</p> <p>■ Bronchospastic disease</p> <p>■ Pregnancy⁴ and breastfeeding</p> <p>■ Adolescents (<18 years)</p>	<p>■ Concomitant therapy with medications/conditions known to lower the seizure threshold</p> <p>■ Hepatic impairment</p> <p>■ Pregnancy⁴ and breastfeeding</p> <p>■ Adolescents (<18 years)</p> <p>■ Treatment-emergent neuropsychiatric symptoms⁵</p> <p>Contraindications:</p> <p>■ Seizure disorder</p> <p>■ Concomitant bupropion (e.g., Wellbutrin) therapy</p> <p>■ Current or prior diagnosis of bulimia or anorexia nervosa</p> <p>■ Simultaneous abrupt discontinuation of alcohol or sedative/benzodiazepines</p> <p>■ MAO inhibitors in preceding 14 days; concurrent use of reversible MAO inhibitors</p>	<p>■ Severe renal impairment (doseage adjustment is necessary)</p> <p>■ Pregnancy⁴ and breastfeeding</p> <p>■ Adolescents (<18 years)</p> <p>■ Treatment-emergent neuropsychiatric symptoms⁵</p>
<p>1st cigarette ≤ 30 minutes after waking; 4 mg</p> <p>1st cigarette >30 minutes after waking; 2 mg</p> <p>Weeks 1-6: 1 piece q 1-2 hours*</p> <p>Weeks 7-9: 1 piece q 2-4 hours*</p> <p>Weeks 10-12: 1 piece q 4-8 hours*</p> <p><i>*while awake</i></p> <p>■ Maximum, 24 pieces/day</p> <p>■ During initial 6 weeks of treatment, use at least 9 pieces/day</p> <p>■ Chew each piece slowly</p> <p>■ Pack between cheek and gum when peppery or tingling sensation appears (~15-30 chews)</p> <p>■ Resume chewing when tingle fades</p> <p>■ Repeat chew/pack steps until most of the nicotine is gone (tingle does not return; generally 30 min)</p> <p>■ Pack in different areas of mouth</p> <p>■ No food or beverages 15 minutes before or during use</p> <p>■ Duration: up to 12 weeks</p>	<p>1st cigarette ≤ 30 minutes after waking; 4 mg</p> <p>1st cigarette >30 minutes after waking; 2 mg</p> <p>Weeks 1-6: 1 lozenge q 1-2 hours*</p> <p>Weeks 7-9: 1 lozenge q 2-4 hours*</p> <p>Weeks 10-12: 1 lozenge q 4-8 hours*</p> <p><i>*while awake</i></p> <p>■ Maximum, 20 lozenges/day</p> <p>■ During initial 6 weeks of treatment, use at least 9 lozenges/day</p> <p>■ Allow to dissolve slowly (20-30 minutes)</p> <p>■ Nicotine release may cause a warm, tingling sensation</p> <p>■ Do not chew or swallow</p> <p>■ Occasionally rotate to different areas of the mouth</p> <p>■ No food or beverages 15 minutes before or during use</p> <p>■ Duration: up to 12 weeks</p>	<p>≥ 10 cigarettes/day: 21 mg/day x 4-6 weeks 14 mg/day x 2 weeks 7 mg/day x 2 weeks</p> <p>≤ 10 cigarettes/day: 14 mg/day x 6 weeks 7 mg/day x 2 weeks</p> <p>■ Rotate patch application site daily; do not apply a new patch to the same skin site for at least one week</p> <p>■ May wear patch for 16 hours if patient experiences sleep disturbances (remove at bedtime); before recommending, rule out other factors that might be contributing (e.g., drug interaction between caffeine and tobacco smoke; other medications; and lifestyle factors)</p> <p>■ Duration: 8-10 weeks</p>	<p>1-2 doses/hour⁶ (8-40 doses/day) One dose = 2 sprays (one in each nostril); each spray delivers 0.5 mg of nicotine to the nasal mucosa</p> <p><i>*while awake</i></p> <p>■ Maximum — 5 doses/hour or — 40 doses/day</p> <p>■ During initial 6-8 weeks of treatment, use at least 8 doses/day</p> <p>■ Gradually reduce daily dose over an additional 4-6 weeks</p> <p>■ Do not sniff, swallow, or inhale through the nose as the spray is being administered</p> <p>■ Duration: 12 weeks</p>	<p>6-16 cartridges/day Individualize dosing; initially use 1 cartridge q 1-2 hours*</p> <p><i>*while awake</i></p> <p>■ Best effects with continuous puffing for 20 minutes</p> <p>■ During initial 6 weeks of treatment use at least 6 cartridges/day</p> <p>■ Gradually reduce daily dose over the following 6-12 weeks</p> <p>■ Nicotine in cartridge is depleted after 20 minutes of active puffing</p> <p>■ Inhale into back of throat or puff in short breaths</p> <p>■ Do NOT inhale into the lungs (like a cigarette) but "puff" as if lighting a pipe</p> <p>■ Open cartridge relays potency for 24 hours</p> <p>■ No food or beverages 15 minutes before or during use</p> <p>■ Duration: 3-6 months</p>	<p>150 mg po q AM x 3 days, then 150 mg po bid</p> <p>■ Do not exceed 300 mg/day</p> <p>■ Begin therapy 1-2 weeks prior to quit date</p> <p>■ Allow at least 8 hours between doses</p> <p>■ Avoid bedtime dosing to minimize insomnia</p> <p>■ Dose tapering is not necessary</p> <p>■ Duration: 7-12 weeks, with maintenance up to 6 months in selected patients</p>	<p>Days 1-3: 0.5 mg po q AM</p> <p>Days 4-7: 0.5 mg po bid</p> <p>Weeks 2-12: 1 mg po bid</p> <p>■ Begin therapy 1 week prior to quit date</p> <p>■ Take dose after eating and with a full glass of water</p> <p>■ Dose tapering is not necessary</p> <p>■ Dosing adjustment is necessary for patients with severe renal impairment</p> <p>■ Duration: 12 weeks; an additional 12-week course may be used in selected patients</p> <p>■ May inhale up to 35 days before target quit date OR may reduce smoking over a 12-week period of treatment prior to quitting and continue treatment for an additional 12 weeks</p>
DOSING		PRECAUTIONS		PRODUCT		

Pharmacologic Product Guide cont.

NICOTINE REPLACEMENT THERAPY (NRT) FORMULATIONS						
GUM	LOZENGE	TRANSDERMAL PATCH	NASAL SPRAY	ORAL INHALER	BUPROPION SR	VARENICLINE
<ul style="list-style-type: none"> ■ Mouth and throat irritation ■ Jaw muscle soreness ■ Hiccups ■ GI complaints (dyspepsia, nausea) ■ May stick to dental work 	<ul style="list-style-type: none"> ■ Mouth and throat irritation ■ Hiccups ■ GI complaints (dyspepsia, nausea) 	<ul style="list-style-type: none"> ■ Local skin reactions (erythema, pruritus, burning) ■ Sleep disturbances (abnormal or vivid dreams, insomnia); associated with nocturnal nicotine absorption 	<ul style="list-style-type: none"> ■ Nasal and/or throat irritation (hot, peppery, or burning sensation) ■ Ocular irritation/tearing ■ Sneezing ■ Cough 	<ul style="list-style-type: none"> ■ Mouth and/or throat irritation ■ Cough ■ Hiccups ■ GI complaints (dyspepsia, nausea) 	<ul style="list-style-type: none"> ■ Insomnia ■ Dry mouth ■ Nausea ■ Anxiously/difficulty concentrating ■ Constipation ■ Tremor ■ Rash ■ Seizures (risk is 0.15%) ■ Neuropsychiatric symptoms (rare; see PRECAUTIONS) 	<ul style="list-style-type: none"> ■ Nausea ■ Sleep disturbances (insomnia; abnormal/wild dreams) ■ Headache ■ Flatulence ■ Constipation ■ Taste alteration ■ Neuropsychiatric symptoms (rare; see PRECAUTIONS)
<ul style="list-style-type: none"> ■ Adverse effects more commonly experienced when chewing the lozenge or using incorrect gum chewing technique (due to rapid nicotine release): <ul style="list-style-type: none"> – Lightheadedness/dizziness – Nausea/vomiting – Hiccups – Mouth and throat irritation 	<ul style="list-style-type: none"> ■ Might serve as an oral substitute for tobacco ■ Might delay weight gain ■ Can be titrated to manage withdrawal symptoms ■ Can be used in combination with other agents to manage situational urges ■ Relatively inexpensive 	<ul style="list-style-type: none"> ■ Once-daily dosing associated with fewer adherence problems ■ Of all NRT products, its use is least obvious to others ■ Can be used in combination with other agents; delivers consistent nicotine levels over 24 hours ■ Relatively inexpensive 	<ul style="list-style-type: none"> ■ Can be titrated to rapidly manage withdrawal symptoms ■ Can be used in combination with other agents to manage situational urges 	<ul style="list-style-type: none"> ■ Might serve as an oral substitute for tobacco ■ Can be titrated to manage withdrawal symptoms ■ Mimics hand-to-mouth ritual of smoking ■ Can be used in combination with other agents to manage situational urges 	<ul style="list-style-type: none"> ■ Twice-daily oral dosing is simple and associated with fewer adherence problems ■ Might delay weight gain ■ Might be beneficial in patients with depression ■ Can be used in combination with NRT agents ■ Relatively inexpensive (generic formulations) 	<ul style="list-style-type: none"> ■ Twice-daily oral dosing is simple and associated with fewer adherence problems ■ Offers a different mechanism of action for patients who have failed other agents ■ Most effective cessation agent when used as monotherapy
<ul style="list-style-type: none"> ■ Need for frequent dosing can compromise adherence ■ Might be problematic for patients with significant dental work ■ Proper chewing technique is necessary for effectiveness and to minimize adverse effects ■ Gum chewing might not be acceptable or desirable for some patients 	<ul style="list-style-type: none"> ■ Need for frequent dosing can compromise adherence ■ Gastrointestinal side effects (nausea, hiccups, heartburn) might be bothersome 	<ul style="list-style-type: none"> ■ When used as monotherapy, cannot be titrated to acutely manage withdrawal symptoms ■ Not recommended for use by patients with dermatologic conditions (e.g., psoriasis, eczema, atopic dermatitis) 	<ul style="list-style-type: none"> ■ Need for frequent dosing can compromise adherence ■ Nasal administration might not be acceptable or desirable for some patients; nasal irritation often problematic ■ Not recommended for use by patients with chronic nasal disorders or severe reactive airway disease ■ Cost of treatment 	<ul style="list-style-type: none"> ■ Need for frequent dosing can compromise adherence ■ Cartridges might be less effective in cold environments (560°F) ■ Cost of treatment 	<ul style="list-style-type: none"> ■ Seizure risk is increased ■ Several contraindications and precautions preclude use in some patients (see PRECAUTIONS) ■ Patients should be monitored for potential neuropsychiatric symptoms* (see PRECAUTIONS) 	<ul style="list-style-type: none"> ■ Patients should be monitored for potential neuropsychiatric symptoms* (see PRECAUTIONS) ■ Cost of treatment
COST/DAY⁵ 2 mg or 4 mg: \$1.90–\$5.49 (9 pieces)	2 mg or 4 mg: \$2.97–\$4.23 (9 pieces)	\$1.52–\$3.49 (1 patch)	\$9.64 (8 doses)	\$16.38 (6 cartridges)	\$0.72 (2 tablets)	\$17.20 (2 tablets)

¹ Marketed by GlaxoSmithKline.

² Marketed by Dr. Reddy's.

³ Marketed by Pfizer.

⁴ The U.S. Clinical Practice Guidelines states that pregnant smokers should be encouraged to quit without medication based on insufficient evidence of effectiveness and theoretical concerns with safety. Pregnant smokers should be offered behavioral counseling interventions that exceed minimal advice to quit.

⁵ In July 2009, the FDA mandated that the prescribing information for all bupropion- and varenicline-containing products include a black-boxed warning highlighting the risk of serious neuropsychiatric symptoms, including changes in behavior, hostility, agitation, depressed mood, suicidal thoughts and behavior, and attempted suicide. Clinicians should advise patients to stop taking varenicline or bupropion SR and contact a health care provider immediately if they experience agitation, depressed mood, or any changes in behavior that are not typical of nicotine withdrawal, or if they experience suicidal thoughts or behavior. If treatment is stopped due to neuropsychiatric symptoms, patients should be monitored until the symptoms resolve. Based on results of a mandated clinical trial, the FDA removed this boxed warning in December 2016.

⁶ Approximate cost based on the recommended initial dosing for each agent and the wholesale acquisition cost from Red Book Online, Thomson Reuters, January 2021.

Abbreviations: MAO, monoamine oxidase; NRT, nicotine replacement therapy; OTC, over-the-counter (nonprescription product); Rx, prescription product.

For complete prescribing information and a comprehensive listing of warnings and precautions, please refer to the manufacturers' package inserts.

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Drug Interactions with Tobacco Smoke



DRUG INTERACTIONS WITH TOBACCO SMOKE

Many interactions between tobacco smoke and medications have been identified. Note that in most cases it is the tobacco smoke—not the nicotine—that causes these drug interactions. Tobacco smoke interacts with medications through pharmacokinetic (PK) and pharmacodynamic (PD) mechanisms. PK interactions affect the absorption, distribution, metabolism, or elimination of other drugs, potentially causing an altered pharmacologic response. The majority of PK interactions with smoking are the result of induction of hepatic cytochrome P450 enzymes (primarily CYP1A2). Smokers may require higher doses of medications that are CYP1A2 substrates. Upon cessation, dose reductions might be needed. PD interactions alter the expected response or actions of other drugs. The amount of tobacco smoking needed to have an effect has not been established, and the assumption is that any smoker is susceptible to the same degree of interaction. **The most clinically significant interactions are depicted in the shaded rows.**

DRUG/CLASS	MECHANISM OF INTERACTION AND EFFECTS
Pharmacokinetic Interactions	
Alprazolam (Xanax®)	<ul style="list-style-type: none"> Conflicting data on significance, but possible ↓ plasma concentrations (up to 50%); ↓ half-life (35%).
Bendamustine (Treanda®)	<ul style="list-style-type: none"> Metabolized by CYP1A2. Manufacturer recommends using with caution in smokers due to likely ↓ bendamustine concentrations, with ↑ concentrations of its two active metabolites.
Caffeine	<ul style="list-style-type: none"> ↑ Metabolism (induction of CYP1A2); ↑ clearance (56%). Caffeine levels likely ↑ after cessation.
Chlorpromazine (Thorazine®)	<ul style="list-style-type: none"> ↓ Area under the curve (AUC) (36%) and serum concentrations (24%). ↓ Sedation and hypotension possible in smokers; smokers may require ↑ dosages.
Clopidogrel (Plavix®)	<ul style="list-style-type: none"> ↑ Metabolism (induction of CYP1A2) of clopidogrel to its active metabolite. Enhanced response to clopidogrel in smokers (≥10 cigarettes/day): ↑ platelet inhibition, ↓ platelet aggregation; improved clinical outcomes have been shown (smokers' paradox; may be dependent on CYP1A2 genotype); tobacco cessation should still be recommended in at-risk populations needing clopidogrel.
Clozapine (Clozaril®)	<ul style="list-style-type: none"> ↑ Metabolism (induction of CYP1A2); ↓ plasma concentrations (by 18%). ↑ Levels upon cessation may occur; closely monitor drug levels and reduce dose as required to avoid toxicity.
Erlotinib (Tarceva®)	<ul style="list-style-type: none"> ↑ Clearance (24%); ↓ trough serum concentrations (2-fold).
Flecainide (Tambocor®)	<ul style="list-style-type: none"> ↑ Clearance (61%); ↓ trough serum concentrations (25%). Smokers may need ↑ dosages.
Fluvoxamine (Luvox®)	<ul style="list-style-type: none"> ↑ Metabolism (induction of CYP1A2); ↑ clearance (24%); ↓ AUC (31%); ↓ C_{max} (32%) and C_{ss} (39%). Dosage modifications not routinely recommended but smokers may need ↑ dosages.
Haloperidol (Haldol®)	<ul style="list-style-type: none"> ↑ Clearance (44%); ↓ serum concentrations (70%); data are inconsistent therefore clinical significance is unclear.
Heparin	<ul style="list-style-type: none"> Mechanism unknown: ↑ clearance; ↓ half-life. Smoking has prothrombotic effects. Smokers may need ↑ dosages due to PK and PD interactions.
Insulin, subcutaneous	<ul style="list-style-type: none"> Possible ↓ insulin absorption secondary to peripheral vasoconstriction. Smoking may cause release of endogenous substances that cause insulin resistance. PK & PD interactions likely not clinically significant, but smokers may need ↑ dosages.
Irinotecan (Camptosar®)	<ul style="list-style-type: none"> ↑ Clearance (18%); ↓ serum concentrations of active metabolite, SN-38 (~40%; via induction of glucuronidation); ↓ systemic exposure resulting in lower hematologic toxicity and may reduce efficacy. Smokers may need ↑ dosages.
Methadone	<ul style="list-style-type: none"> Possible ↑ metabolism (induction of CYP1A2, a minor pathway for methadone). Carefully monitor response upon cessation.
Mexiletine (Mexitol®)	<ul style="list-style-type: none"> ↑ Clearance (25%; via oxidation and glucuronidation); ↓ half-life (36%).
Nintedanib (OFEV®)	<ul style="list-style-type: none"> Decreased exposure (21%) in smokers. No dose adjustment recommended; however, patients should not smoke during use.

Drug Interactions with Tobacco Smoke cont.

Pharmacokinetic Interactions (continued)	
DRUG/CLASS	MECHANISM OF INTERACTION AND EFFECTS
Olanzapine (Zyprexa®)	<ul style="list-style-type: none"> ▪ ↑ Metabolism (induction of CYP1A2); ↑ clearance (98%); ↓ serum concentrations (12%). ▪ Dosage modifications not routinely recommended but smokers may need ↑ dosages.
Pirfenidone (Esbriet®)	<ul style="list-style-type: none"> ▪ ↑ Metabolism (induction of CYP1A2); ↓ AUC (46%) and ↓ C_{max} (68%). ▪ Decreased exposure in smokers might alter efficacy profile.
Propranolol (Inderal®)	<ul style="list-style-type: none"> ▪ ↑ Clearance (77%; via side-chain oxidation and glucuronidation)
Riociguat (Adempas®)	<ul style="list-style-type: none"> ▪ ↓ Plasma concentrations (by 50–60%). ▪ Smokers may require dosages higher than 2.5 mg three times a day; consider dose reduction upon cessation.
Ropinirole (Requip®)	<ul style="list-style-type: none"> ▪ ↓ C_{max} (30%) and ↓ AUC (38%) in study with patients with restless legs syndrome. ▪ Smokers may need ↑ dosages.
Tasimelteon (Hetlioz®)	<ul style="list-style-type: none"> ▪ ↑ Metabolism (induction of CYP1A2); ↓ drug exposure (40%). ▪ Smokers may need ↑ dosages.
Theophylline (Theo-Dur®, etc.)	<ul style="list-style-type: none"> ▪ ↑ Metabolism (induction of CYP1A2); ↑ clearance (58–100%); ↓ half-life (63%). ▪ Levels should be monitored if smoking is initiated, discontinued, or changed. Maintenance doses are considerably higher in smokers; ↑ clearance also with second-hand smoke exposure.
Tizanidine (Zanaflex®)	<ul style="list-style-type: none"> ▪ ↓ AUC (30–40%) and ↓ half-life (10%) observed in male smokers
Tricyclic antidepressants (e.g., imipramine, nortriptyline)	<ul style="list-style-type: none"> ▪ Possible interaction with tricyclic antidepressants in the direction of ↓ blood levels, but the clinical significance is not established.
Warfarin	<ul style="list-style-type: none"> ▪ ↑ Metabolism (induction of CYP1A2) of R-enantiomer; however, S-enantiomer is more potent and effect on INR is inconclusive. Consider monitoring INR upon smoking cessation.
Pharmacodynamic Interactions	
Benzodiazepines (diazepam, chlordiazepoxide)	<ul style="list-style-type: none"> ▪ ↓ Sedation and drowsiness, possibly caused by nicotine stimulation of central nervous system.
Beta-blockers	<ul style="list-style-type: none"> ▪ Less effective BP and heart rate control effects, possibly caused by nicotine-mediated sympathetic activation. ▪ Smokers may need ↑ dosages
Corticosteroids, inhaled	<ul style="list-style-type: none"> ▪ Smokers with asthma may have less of a response to inhaled corticosteroids.
Hormonal contraceptives (combined)	<ul style="list-style-type: none"> ▪ ↑ Risk of cardiovascular adverse effects (e.g., stroke, myocardial infarction, thromboembolism) in women who smoke and use combined hormonal contraceptives. Ortho Evra patch users shown to have 2-fold ↑ risk of venous thromboembolism compared with oral contraceptive users, likely due to ↑ estrogen exposure (60% higher levels). ▪ ↑ Risk with age and with heavy smoking (≥15 cigarettes per day) and is quite marked in women ≥35 years old.
Serotonin 5-HT ₁ receptor agonists (triptans)	<ul style="list-style-type: none"> ▪ This class of drugs may cause coronary vasospasm; caution for use in smokers due to possible unrecognized CAD.
Adapted and updated, from Zevin S, Benowitz NL. Drug interactions with tobacco smoking. An update. <i>Clin Pharmacokinet</i> 1999;36:425–38 and Kroon LA. Drug interactions with smoking. <i>Am J Health-Syst Pharm</i> 2007;64:1917–21.	

Results of the Practice-Improvement Project Incorporating Tobacco Cessation Into a Doctor of Nursing Practice Program

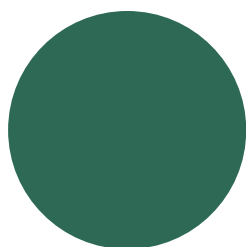
The three-part educational content described above was incorporated into coursework in a health promotion course at North Dakota State University in the Spring of 2022. Participation in the questionnaire pre- and post-education was anonymous and voluntary.

All 17 participants were female, and a majority had 3-5 years of nursing experience (n = 12), whereas the remaining had 6-10 years of experience (n = 5). No participants had used tobacco products within the last 30 days, and no participants had any previous tobacco training.

Questions 1-7 were a self-assessment of participants' motivation and confidence regarding helping people quit tobacco. Questions 8-11 were a self-assessment of the participants' comfort and confidence in providing information and referrals for evidence-based tobacco cessation aids.

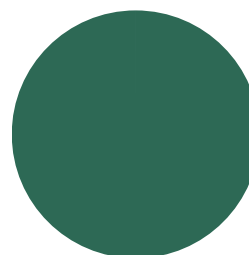
Questionnaire Results

1. It is important, as a practitioner, to know whether a client uses tobacco.



Strongly Agree
100%

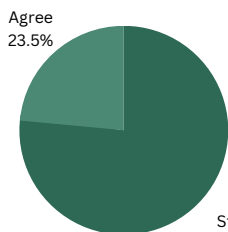
Pre-Education



Strongly Agree
100%

Post-Education

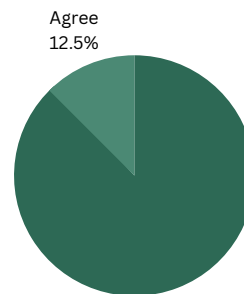
2. It is important, as a practitioner, to know whether a patient/client has regular exposure to secondhand smoke.



Agree
23.5%

Strongly Agree
76.5%

Pre-Education



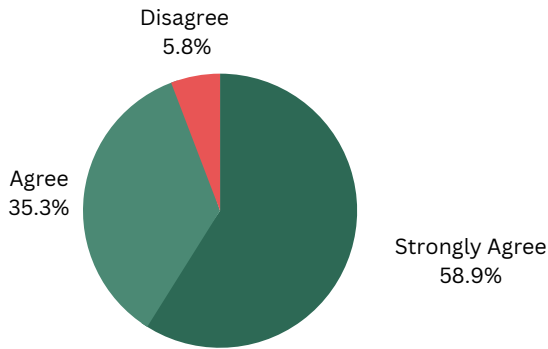
Agree
12.5%

Strongly Agree
87.5%

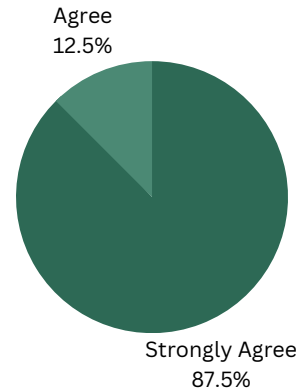
Post-Education

Questionnaire Results cont.

3. I am motivated to help tobacco users quit.

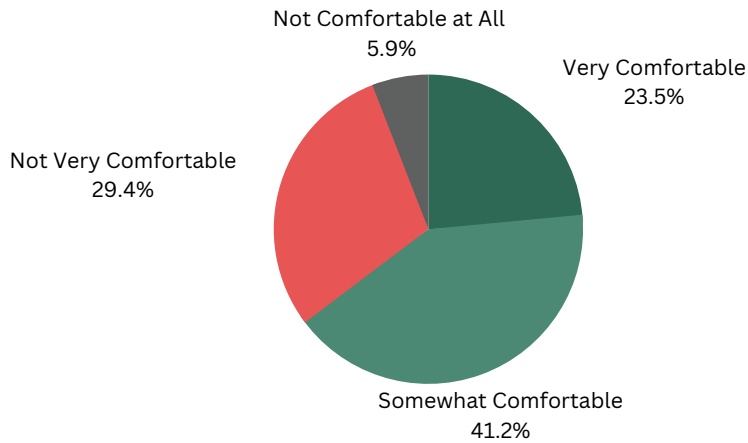


Pre-Education

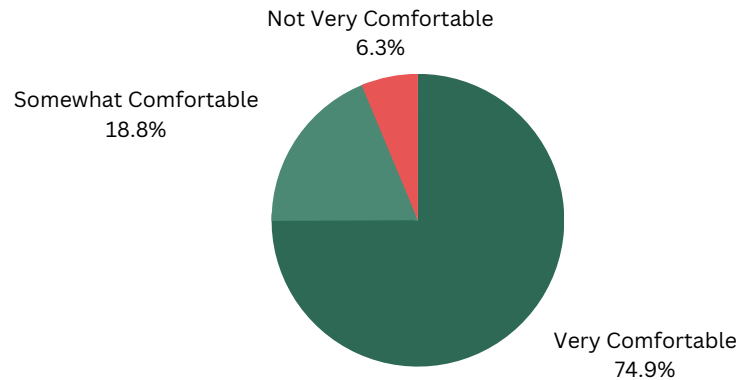


Post-Education

4. How comfortable are you in talking with clients about tobacco use?

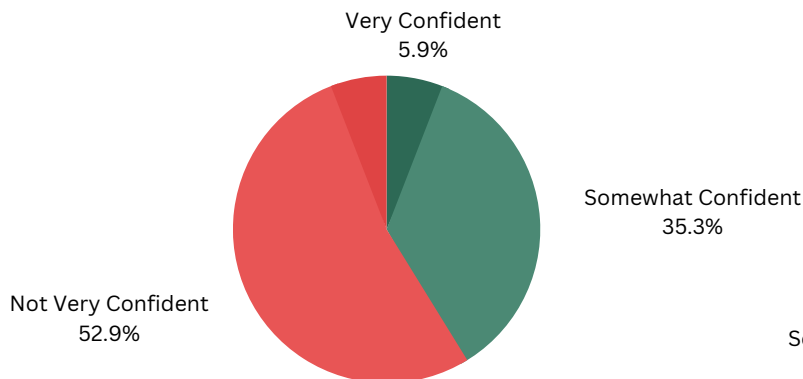


Pre-Education

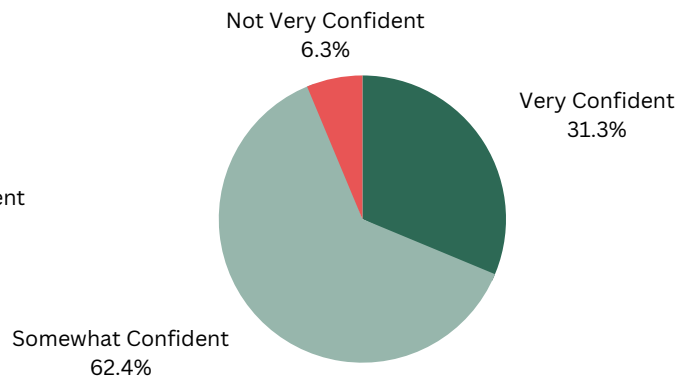


Post-Education

5. I am confident that I can explore issues related to quitting smoking, even with someone not interested in quitting.



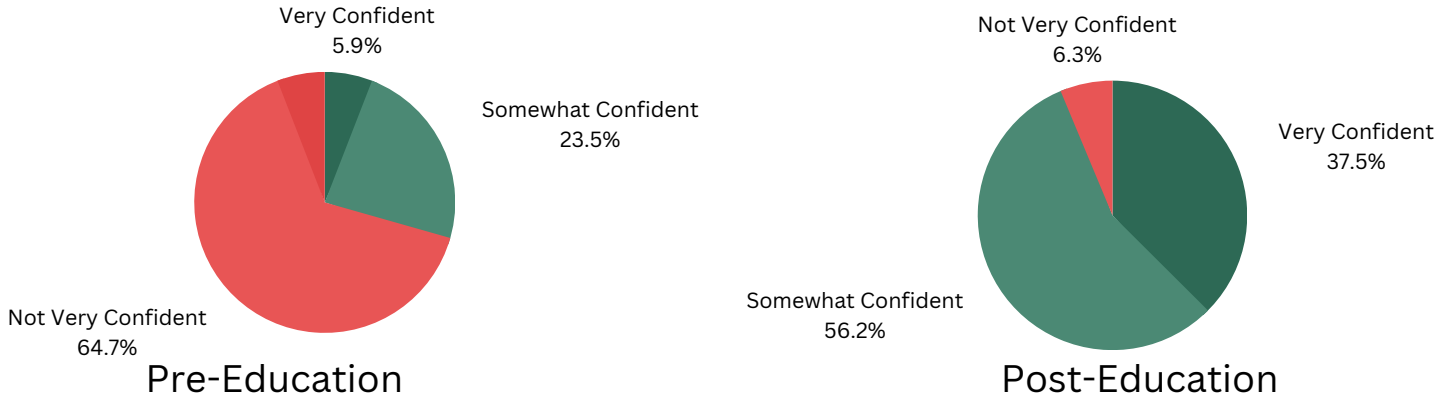
Pre-Education



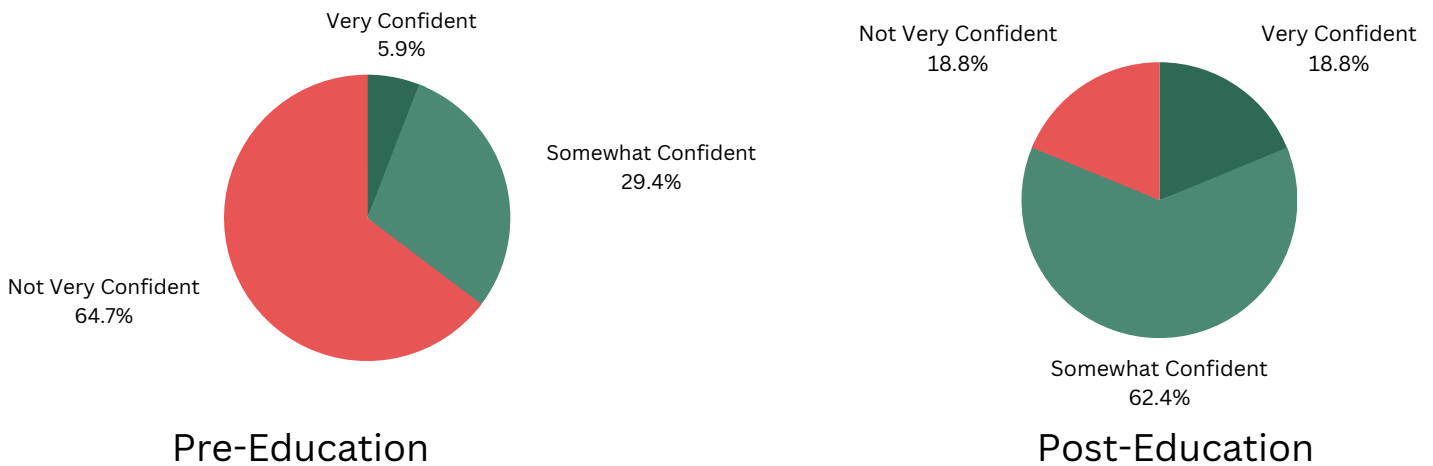
Post-Education

Questionnaire Results cont.

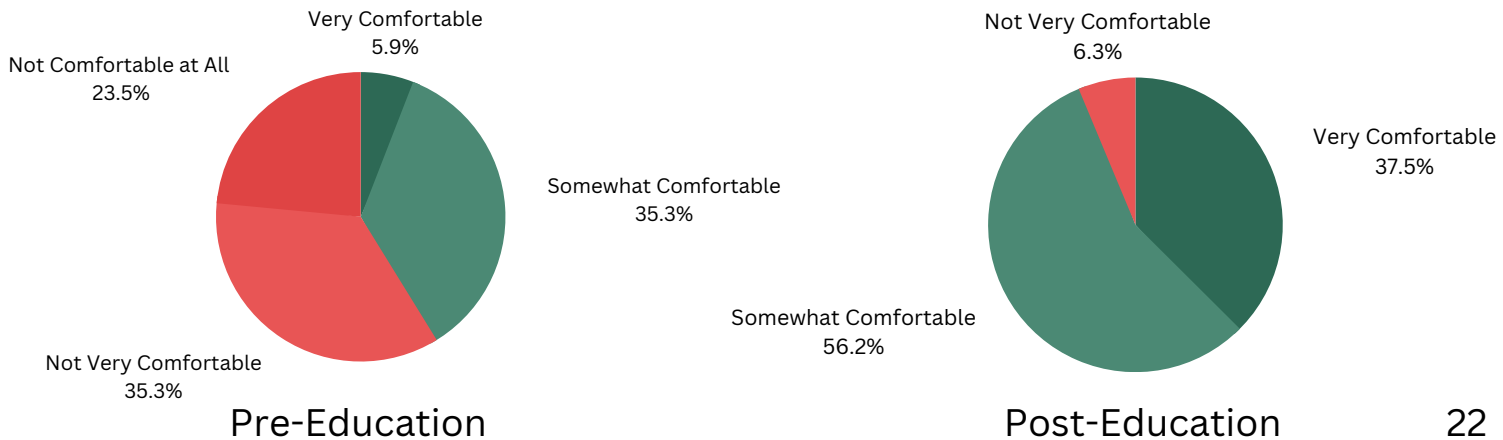
6. I am confident that I can personalize the benefits of quitting with each individual tobacco user.



7. I am confident that I know if a patient has regular exposure to secondhand smoke.



8. How comfortable are you in providing information about medications that help in quitting tobacco?

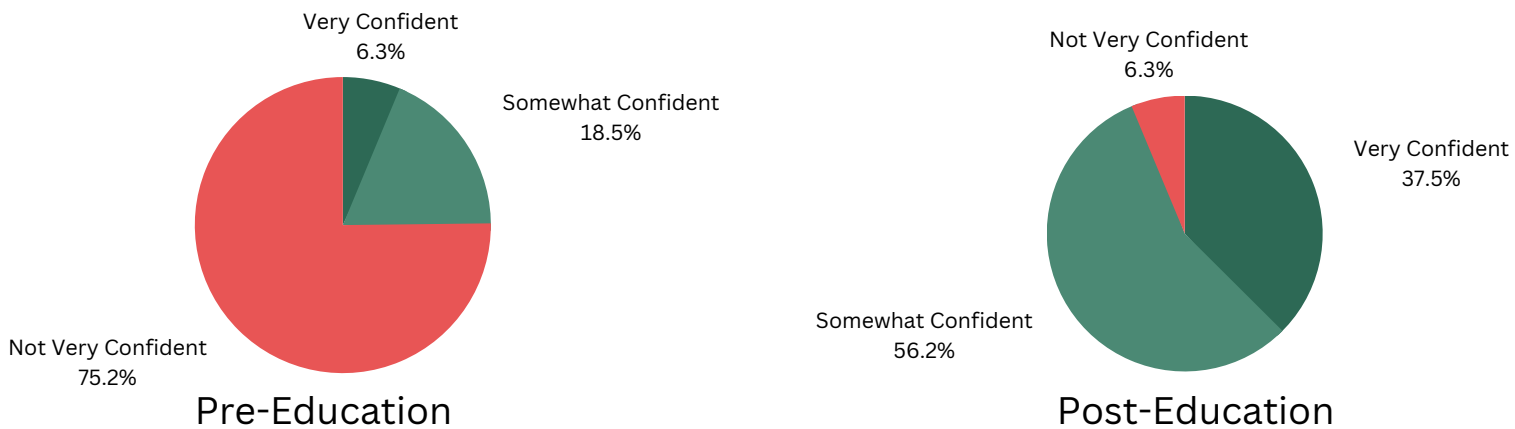


Questionnaire Results cont.

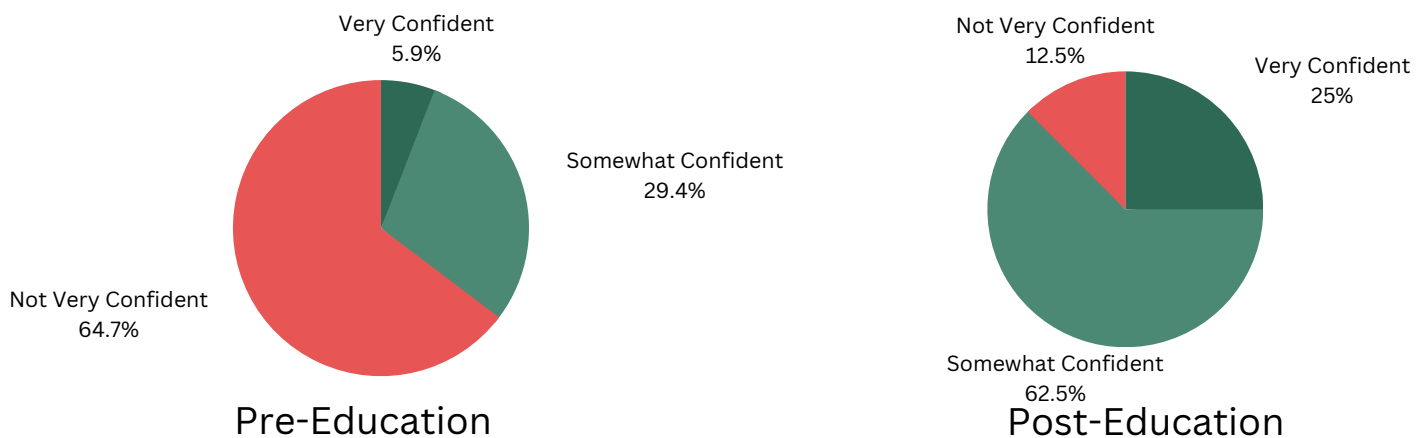
9. How comfortable are you in providing information about programs and services that help aid in quitting (quit lines, counseling etc.)?



10. I am confident that I can provide information about programs and services that help in quitting (quitlines, counseling, etc).



11. I am confident that I can provide information about medications that can help in quitting tobacco.



Discussion and Conclusions

The purpose of this evidence-based practice-improvement project was to determine whether implementing tobacco cessation education into the coursework of the DNP program at NDSU would improve DNP students' (a) motivation and confidence in helping people quit tobacco and (b) comfort with providing information about cessation medications, programs and services, and referrals for evidence-based tobacco cessation.

The students' (a) motivation and confidence in helping people quit tobacco and (b) comfort with providing information about cessation medications, programs and services, and referrals for evidence-based tobacco cessation increased dramatically from pre-education to 2.5 months post-education for all 11 questions, with the exception of question 1, in which case, all participants strongly agreed in both the pre- and post-education questionnaire.

The outcomes of this project suggest that implementing tobacco cessation education into a DNP program is an effective approach to increase future primary care providers' ability to provide effective tobacco and nicotine dependence treatment in their practice.

An in-depth discussion and several recommendations are available in the full dissertation project that is available in the NDSU Repository. <https://library.ndsu.edu/ir/handle/10365/33238>

References

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The full project titled ***A Practice Improvement Project Incorporating Tobacco Cessation Education into a Doctor of Nursing Practice Program*** is available through NDSU Repository (<https://library.ndsu.edu/ir/handle/10365/33238>) or by contacting:

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