Reducing Smoking and Children's Exposure to Second Hand Tobacco Smoke: The new ACCP Tobacco Dependence Treatment Tool Kit

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Disclosures

- Most of what I am presenting today is from the ACCP Tobacco Dependence Treatment Toolkit 3rd Edition
- I am one of the contributors to the toolkit
- I want you to get and use the toolkit.

Acknowledgements

- Members of the Tobacco Dependence Treatment Toolkit 3rd Edition Committee
  - David PL Sachs, MD (chair)
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  - Harold J. Farber, MD
  - Matthew Bars
  - Sandra Zelman-Lewis

Tobacco smoke exposure and asthma

- Reduces Oral and Inhaled Corticosteroid Responsiveness
- May increase severity of respiratory viral infections

Tobacco smoke triggered asthma behaves differently

- The rate of decline in lung function for individuals who smoke and have asthma is greater than for either alone (1).
- Exhaled nitric oxide is decreased in smokers (2).
- Urinary leukotriene levels are increased in smokers with asthma (3).
- The effect of genetic polymorphisms at 17q21 on risk for early asthma is magnified by early life tobacco smoke exposure (4).
- Severity of respiratory viral infections appears to be augmented by smoke exposure (5)

1. Apostol GG, et al. Am J Respir Crit Care Med. 2002;166(2):166-72.

2. Kharitonov SA, et al. Am J Respir Crit Care Med. 1995;152(2):609-12.

3. Gaki E, et. al. Respiratory Medicine 2007;101: 826–832.

4. Bouzigon E, et. al. N Engl J Med. 2008;359(19):1985-94.

5. McConnochie KM, Roghmann KJ. Am J Dis Child 1986;140:806-12.

Medication Response is different

- Responses to inhaled and oral corticosteroids are impaired (1-3)
- Response to leukotriene modifier medication is more prominent (3)

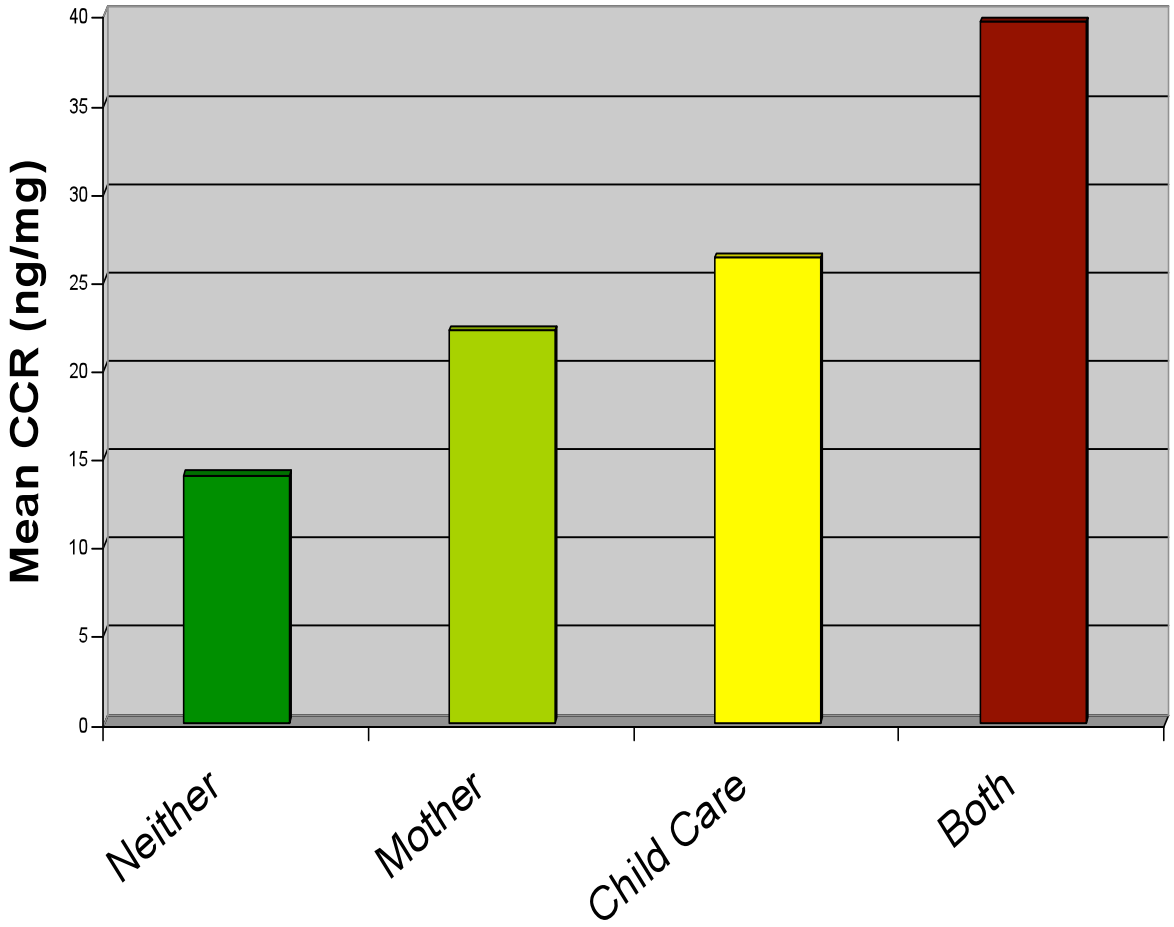
1. Chalmers GW, et al. Thorax 2002;57:226–230.
2. Chaudhuri R, et al. Am J Respir Crit Care Med 2003;168:1308–1311
3. Lazarus SC, et a. Am J Respir Crit Care Med. 2007;175(8):783-90


Most smoke exposure of children comes from their parents and caregivers

Cotinine level as a function of caregiver smoking status.

LETS Manage Asthma Study

N= 519 Smoke Exposed Children 3-12 years with asthma



Farber HJ et al. Chest. 2008 Jun;133(6):1367-74

Tobacco Dependence is a severe addiction.

Behavioral Interventions have limited benefit

"It is difficult to identify any other condition that presents such a mix of lethality, prevalence, and neglect, despite effective and readily available interventions"

Fiore MC, Jaén 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.

Pediatricians have a unique opportunity

- Young adult parents may present to a pediatrician (for care of their children) more often than to their own physician
- Pediatricians have an important opportunity
  - To reduce BOTH the parent's and the child's tobacco related morbidity.

The American Academy of Pediatrics

- Pediatricians should inquire about active and secondhand smoke exposure of their patients.
- Pediatric health care providers should be knowledgeable about tobacco cessation and ROUTINELY offer help and referral to those who are nicotine dependent

American Academy of Pediatrics: Committee on Substance Abuse. Tobacco's Toll: Implications for the Pediatrician. PEDIATRICS 2001;107(4): 794-798. Reaffirmed 2006.

- “I had given up hope of ever quitting until our discussion (of effective pharmacotherapy of tobacco dependence)”
  - *Parent of a child with asthma and recurrent pneumonia*

If you can treat asthma you can treat tobacco dependence

- Goal of asthma therapy:
  - Normal lung function
    - Minimal to no asthma symptoms
- Goal of tobacco dependence therapy
  - Normal brain function
    - Minimal to no symptoms of nicotine withdrawal

If you can treat asthma you can treat tobacco dependence

- Assess severity in asthma:
  - Asthma Control Test
  - Asthma Therapy Assessment Questionnaire
- Assess disease severity in tobacco dependence
  - Fagerström Test for Nicotine Dependence
  - Modified Fagerström Tolerance Questionnaire (adolescents)

If you can treat asthma you can treat tobacco dependence

- Controller Medications
  - Nicotine Patch (OTC)
  - Bupropion (Rx)
  - Varenicline (Rx)
- Reliever Medications
  - Nicotine gum, lozenge (OTC)
  - Nicotine inhaler, nasal spray (Rx)
- Severity of disease guides intensity of treatment
- Pre-medicate for at risk situations

If you can treat asthma you can treat tobacco dependence

- On follow-up
  - If disease is well controlled
    - Step down medications
  - If disease is not well controlled
    - Evaluate for triggers, adherence, etc.
    - Consider stepping up medication
  - Medications are adjusted based on control of the underlying disease -- not on a fixed timetable.

Nicotine withdrawal symptoms:

- Cravings for cigarettes
- Irritability, frustration, anger
- Increased appetite
- Tremors
- Dysphoric or depressed mood
- **Insomnia**
- **Anxiety, Restlessness**
- **Difficulty concentrating**
- **Slowed cognitive performance**

Treating Tobacco Dependence: American College of Chest Physicians Tool Kit (3rd Edition). In Press

Simple Steps in Treating Tobacco Dependence

- **ASK** about smoking and smoke exposure
- **ASSESS** the disease
- **RECOMMEND** treatment
- **MONITOR** for effectiveness and side effects.
- **REVISE** the treatment plan

ASK

- Second hand smoke:
  - Does anyone who lives with (name of child) smoke?
  - Does anyone who provides care for (name of child) smoke?
  - Does (name of child) visit places where people smoke?
- Active smoking (adolescent):
  - How many of your friend's smoke?
  - Have you ever tried (name of tobacco product)?
  - How many times have you tried (name of tobacco product)?
  - How much do you smoke?

Assess

- Assess severity of disease
  - Fagerström Test for Nicotine Dependence
  - Modified Fagerström Tolerance Questionnaire (adolescents)
  - Hooked on Nicotine Checklist (autonomy over smoking)
- Previous experience with smoking cessation

Assess

- Co-morbid conditions
  - Psychiatric conditions
    - Beck Depression Inventory-II,
      - Anxiety
      - Depression
      - Suicidality
      - Other substance abuse
  - Medications
    - Drug metabolism may be altered by smoking cessation

Factors Predicting More Intensive Tobacco-Dependence Treatment Requirements

- Higher Level of Physical Nicotine Dependence
  - FTND (Fagerström Test for Nicotine Dependence) Score ≥ 5 out of 10 points
- Higher Quantitative Nicotine Withdrawal Symptom Score
  - NWS (Nicotine Withdrawal Symptom) Score ≥ 20 out of 48 points
- Higher Serum Cotinine Level
  - Serum Cotinine ≥ 250-ng cotinine/mL
- Heavy Cigarette Smoker
  - Smokes ≥25 cigarettes/day (cpd)
- Short Time to First Cigarette of the Day
  - Time ≤ 5 minutes

Factors Predicting More Intensive Tobacco-Dependence Treatment-Requirements

- Female Sex
- Started Regular Tobacco Use Young
  - Age ≤17 years old
- Multiple Previous Stop-Smoking Attempts
- Another Cigarette Smoker in the Household
- Current Psychiatric Condition
- Current substance abuse

Factors Predicting More Intensive Tobacco-Dependence Treatment-Requirements

- Symptomatic Nicotine Withdrawal with Prior Stop-Smoking Attempt
- Low Annual Household Income
- Low Educational Level

Classification of Severity – Table #1

CLASSIFY TOBACCO-DEPENDENCE SEVERITY
Clinical Features Before Treatment*

	Cigarette Use	Nicotine Withdrawal Symptoms	Quantitative	Health Status
STEP 4 Very Severe	• >40 CPD • Daily use • Time To 1st Cig: 0-5 min	• Constant • NWS >40	• FTND 8-10 • Se Cotinine >400 ng/mL	• ≥ 1 Chronic Medical Dis., AND/OR • ≥ 1 Psychiatric Disease
STEP 3 Severe	• 20-40 CPD • Daily use • Time To 1st Cig: 6-30 min	• Constant • NWS 31-40	• FTND 6-7 • Se Cotinine 251-400 ng/mL	• ≥ 1 Chronic Medical Dis., OR • ≥ 1 Psychiatric Disease
STEP 2 Moderate	• 6-19 CPD • Daily use • Time To 1st Cig: 31-60 min	• Frequent • NWS 21-30	• FTND 4-5 • Se Cotinine 151-250 ng/mL	• Healthy medically • Healthy psychiatrically
STEP 1 Mild	• 1-5 CPD •Intermittent Use • Time To 1st Cig: >60 min	• Intermittent • NWS 11-20	• FTND 2-3 • Se Cotinine 51-150 ng/mL	• Healthy medically • Healthy psychiatrically
STEP 0 Non-Daily/ Social	• Non-daily cigarette use • Social setting, only • Time To 1st Cig: >>60 min	• None • NWS <10	• FTND 0-1 • Se Cotinine <50 ng/mL	• Healthy medically • Healthy psychiatrically

***The presence of one feature of severity is sufficient to place patient in that category.**

•**CPD**=Cigarettes Per Day •**Time To 1st Cig**=Time To First Cigarette after Awakening in the Morning •**NWS**=Nicotine Withdrawal Symptom Score
•**FTND**=Fagerström Test for Nicotine Dependence Score •**Se**=Serum •**Cotinine**=First-pass, hepatic metabolite of nicotine; physiologically inactive

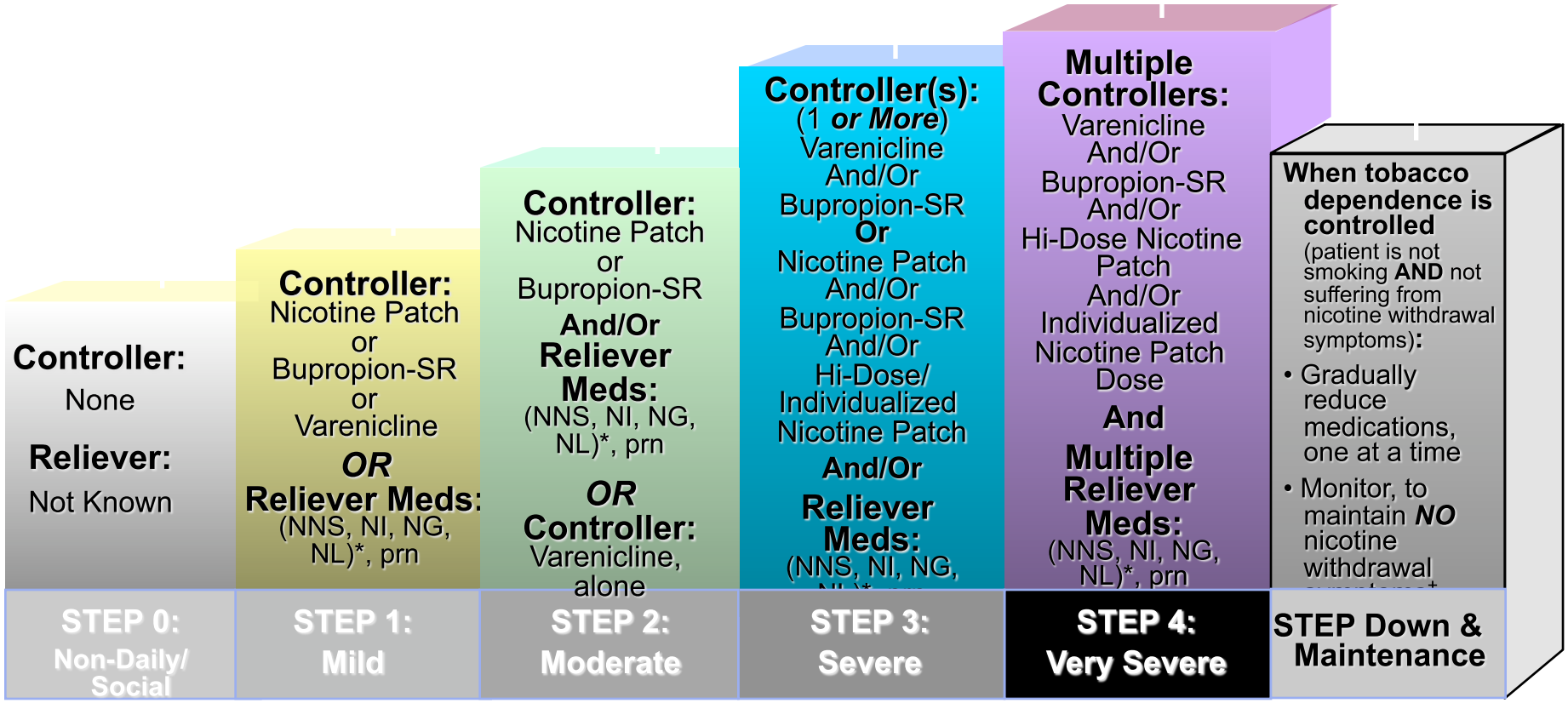
Recommend

- Base treatment intensity on
  - Severity of underlying disease.
  - Prior experience with tobacco dependence treatment
  - Combination therapy is more effective than single agent therapy.

Initial & Long-Term Tobacco-Dependence Medical Management

Stepwise Approach to Tobacco-Dependence Treatment

Outcome: Tobacco-Dependence Control
No Nicotine Withdrawal Symptoms and No Smoking



Reliever Medications (Rapid Acting Nicotine Agonists):** •**NNS**=Nicotine Nasal Spray •**NI**=Nicotine [Oral] Inhaler •**NG**=Nicotine Gum •**NL**= Nicotine Lozenge. †Some patients will need indefinite use of Controller or Reliever Medications to maintain zero nicotine withdrawal symptoms and no cigarette use.***

Freedom from Tobacco Action Plan

Tobacco use is more than a habit. It's an addition.

In the green and good to go!

I have no real cravings for tobacco. I'm pretty calm. I feel like my brain can focus normally.

I use medicine to control nicotine cravings every day.
❒ Nicotine patch: _____ mg patch _____ # patches, apply once daily.
❒Bupropion IR, SR, XL (Wellbutrin® or Zyban®): ____mg/day once daily for first ___ days, then _____
❒ Varenicline (Chantix ®)
❒Use Starter Pack as directed
❒ Use continuing month pack, ___ mg tab, ____ times per day
❒ Use prior to problem times: _____

Yellow, but not so mellow.

I'm craving tobacco. I may be feeling irritable, anxious, and restless.
It is hard for me to get my brain to focus.

Continue your Green zone EVERY DAY Medicine

Need a rescue? Take a quick-relief nicotine medicine:

❒ Gum ❒ Lozenge ❒ Nasal Spray ❒ Inhaler

Take _____(dose) every _____ minutes as needed.

Seeing red.

I am feeling strong cravings for tobacco. I really need a cigarette now. It may be very hard to get my brain to focus.

In the RED ZONE, take a quick-relief nicotine medicine.

Take _____(dose) every _____ minutes as needed. ❒ Gum ❒ Lozenge ❒ Nasal Spray ❒ Inhaler

Continue your Green zone EVERY DAY Medicine.
If you are in the red zone, contact your physician or tobacco dependence treatment specialist. You may need stronger medicine.

Monitor

- Adherence to treatment
- Effectiveness of treatment
  - Control of nicotine withdrawal
  - Lapses in tobacco use
- Side effects of treatment

Revise

- What changes to the tobacco dependence treatment plan are needed.

Not ready to quit yet

- Discuss “5Rs”.
  - *relevance, risks, rewards, roadblocks*, *repetition*
- Individualize to age appropriate and personally relevant.
  - For adolescents:
    - Bad breath, yellowed fingers, smelly clothes.
- The benefits of quitting
  - For adolescents:
    - Better performance in sports
    - Money saved
- Resources to treat tobacco dependence

Reduction toward cessation

- Use nicotine patch to reduce smoking and prepare for cessation
- Use of NRT to reduce smoking and gain greater control of smoking behavior

Nicotine Safety

- Keep out of reach of children and pets.
- Overdose is possible, though rare. Signs of overdose include headaches, drooling, dizziness, nausea, vomiting, diarrhea, mental confusion, weakness, and fainting.
- Safe for patients with heart disease or hypertension to use nicotine medications.
- Medications with extensive cytochrome metabolism such as theophylline and warfarin may require dose adjustments following smoking cessation.

Nicotine Safety

- NOT one smoker has died from therapeutic nicotine since its approval in 1984
- In that time over 8 million smokers have died from the effects of tobacco.
- NRT is underutilized by physicians and by the patients who could benefit from them.

Relievers

- Nicotine Gum (OTC) (2 mg and 4 mg)
  - Chew slowly until a slight tingling or a peppery taste
  - Then place between the cheek and the gum until the peppery taste or tingling is gone.
  - Proper technique is important.
    - Swallowed nicotine can cause nausea and hiccups.
  - Highly nicotine dependent persons
    - use the 4-mg dose.

Relievers

- Nicotine Lozenge (OTC) (2 mg and 4 mg)
  - Place between cheek and gum and allow to dissolve
  - Allowed to dissolve slowly over a 20-30 minute period
  - Do NOT swallow lozenge.
  - Do not place under tongue
    - excess saliva will lead to swallowed nicotine and GI side effects
  - Highly tobacco dependent
    - Use the 4 mg dose.

Relievers

- Nicotine oral inhaler (Rx)
  - Nicotine is absorbed across oral mucosae
  - Side effects (cough, sore throat) increased by deep inhalation

Relievers

- Nicotine Nasal Spray (Rx)
  - Nicotine reaches the bloodstream faster
  - It has an impact more similar to the cigarette than other forms of nicotine replacement.
  - May cause mild burning of nasal mucosa

Considerations in reliever choice

- Nicotine Nasal Spray:
  - Patient is severely addicted to nicotine (FTND score ≥ 7)
  - Patient is obese (BMI ≥ 30 kg/m^2)
  - Patient has experienced treatment difficulty or failure with other rescue medications
  - Patient preference
- Nicotine Gum:
  - Patient preference
- Nicotine Lozenge
  - Patient is edentulous
  - Inconspicuous use a priority
  - Patient preference
- Nicotine inhaler
  - Patient needs respiratory tract sensory stimulation
  - Patient prefers hand-mouth tactile stimulation

E-cigarette

- No safety/efficacy trials
- FDA analysis found carcinogenic and toxic substances in the vapor of these devices
- Vapor of many products **contains anti-freeze**
- An “introductory” product to get kids hooked.
- Use of flavorings (chocolate, strawberry and mint) is designed to appeal to young people

Controllers

- Nicotine Patch (OTC)
  - Step 1 (21 mg)
  - Step 2 (14 mg)
  - Step 3 (7 mg)
  - May cause vivid/bizarre dreams, insomnia remove before bedtime.
  - May cause skin irritation
  - Adjust dose to effect

Controllers

- Bupropion SR (Rx)
- Increases dopaminergic tone
  - Decreases compulsion to smoke
- Contraindicated if seizure disorder
- Start 1-2 weeks before quit date
- More effective when used in combination with NRT.

Controllers

- Varenicline (Rx)
  - Nicotine receptor partial agonist/antagonist
  - Start at 7-14 days before target quit date
  - Note black box warning on suicide risk
    - Need to differentiate inadequately treated nicotine withdrawal
  - Combination with NRT and/or bupropion can be used for severe nicotine dependence

Case example

- Adult, female
- She smokes 15 cigarettes/day
- First cigarette of the day ~31 minutes after awakening
- Began smoking at age 14
- Fagerström Test for Nicotine Dependence (FTND) score of 5/10 points
- **Moderate Tobacco Dependence.**

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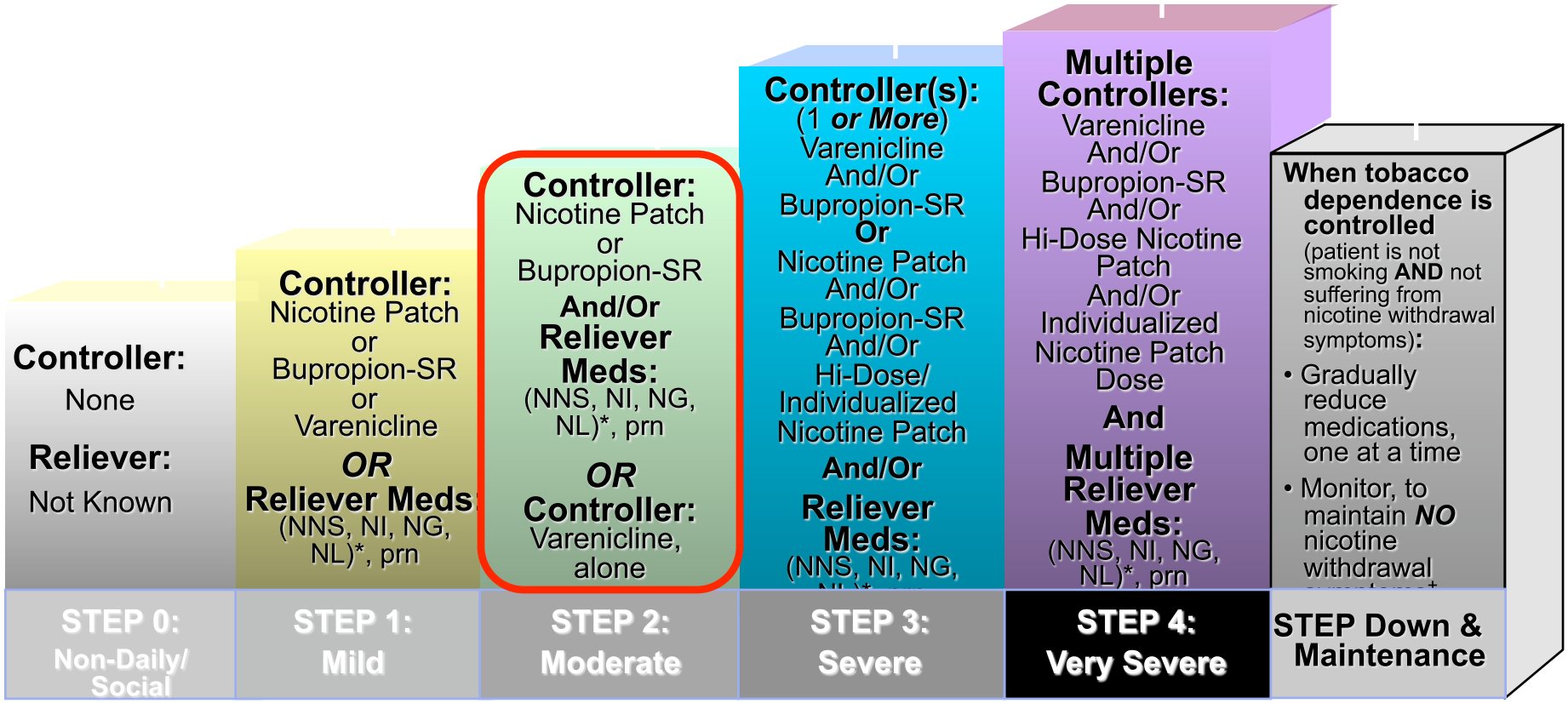

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CEASE Program

Clinical Effort Against Secondhand smoke Exposure

- Can be easily implemented in pediatric practices
- Can be used by non-physicians

CEASE Program

www.ceasetobacco.org

- Ask
- Assist
- Refer

CEASE Program

www.ceasetobacco.org

- Ask
  - About smoking status of household members
  - Rules about smoking in the home

CEASE Program

www.ceasetobacco.org

- Assist
  - In quitting smoking
  - In establishing smoke free home and car policies
  - **Prescribe OR recommend appropriate medication**

CEASE Program

www.ceasetobacco.org

- Refer
  - **To the quitline**
    - **1 800 QUIT NOW**
    - **To a tobacco dependence treatment program**
- Make a follow-up plan

Conclusions:

- Tobacco dependence is not just a bad habit
  - It is a severe addiction
- The most effective tobacco dependence treatments involve
  - Use of medications
  - Goal is to control nicotine withdrawal and allow the patient to feel normal

Conclusions:

- Similar to asthma
  - There are controller and reliever medications
  - Intensity of initial pharmacotherapy is determined by disease severity
  - Adjustment of pharmacotherapy is based on disease control
  - Green/yellow/red zone plans can be used

Conclusions

- In contrast to asthma
  - The person who needs treatment may not be not your patient
  - Caregivers smoking impacts the child
  - Treatment of the tobacco dependence of a child's caregivers is important to the child's asthma control.

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Conclusions

- Ideal is to offer tobacco dependence treatment yourself
- Much benefit can be had from appropriate use of OTC medications as controller + reliever.
- If you are not prescribing treatment yourself, showing them the way can make a huge difference.