



Ask-Advise-Refer

Brief Interventions for Assisting
Patients with Quitting



TRAINING OVERVIEW

- Epidemiology of Tobacco Use
- Addiction to Nicotine
 - Medications for Quitting
- Changing Behavior



EPIDEMIOLOGY of TOBACCO USE



"CIGARETTE SMOKING...

is the chief, single, avoidable
cause of death
in our society and the most
important public health issue of
our time."

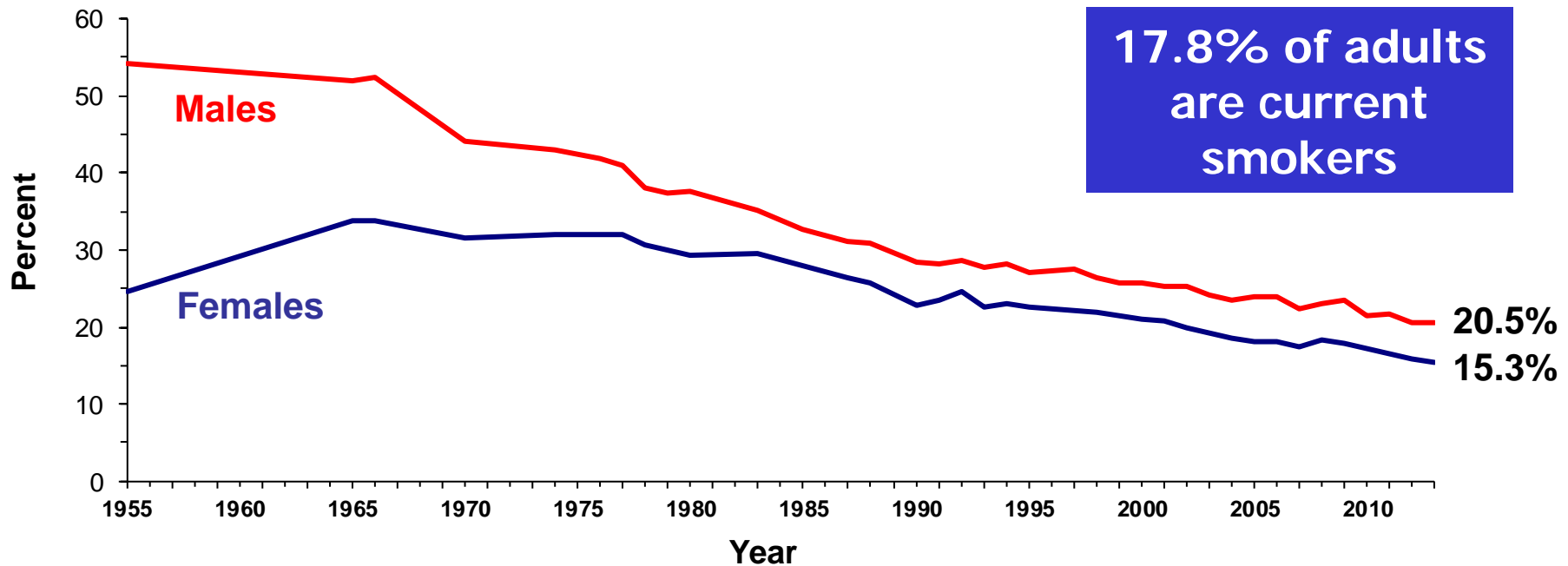
C. Everett Koop, M.D., former U.S. Surgeon General

All forms of tobacco are harmful.



TRENDS in ADULT SMOKING, by SEX—U.S., 1955–2013

Trends in cigarette current smoking among persons aged 18 or older



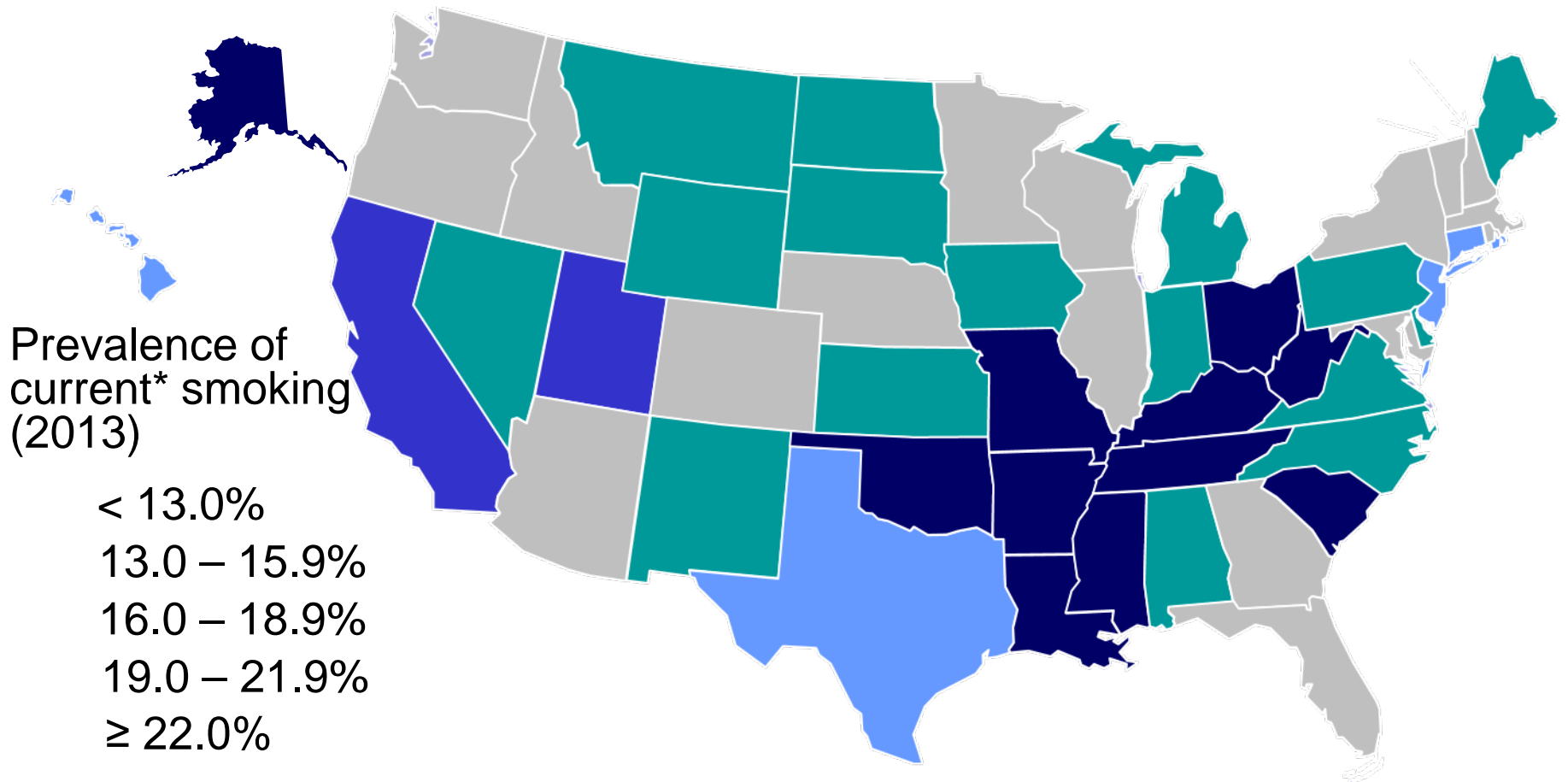
69% want to quit
53% tried to quit in the past year

Graph provided by the Centers for Disease Control and Prevention. 1955 Current Population Survey; 1965–2013 NHIS. Estimates since 1992 include some-day smoking.





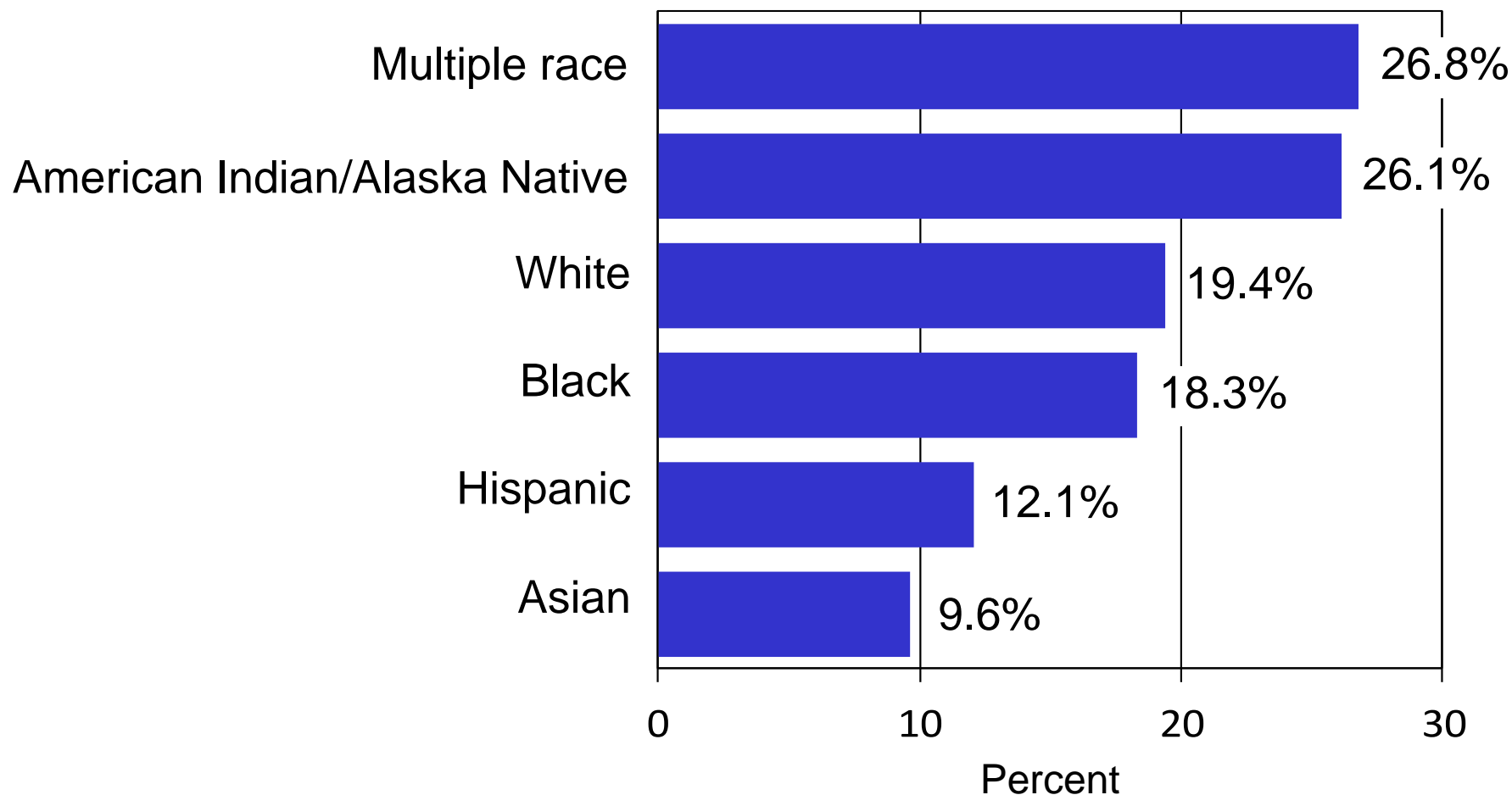
STATE-SPECIFIC PREVALENCE of SMOKING among ADULTS, 2013



* Has smoked ≥ 100 cigarettes during lifetime and currently smokes either every day or some days.

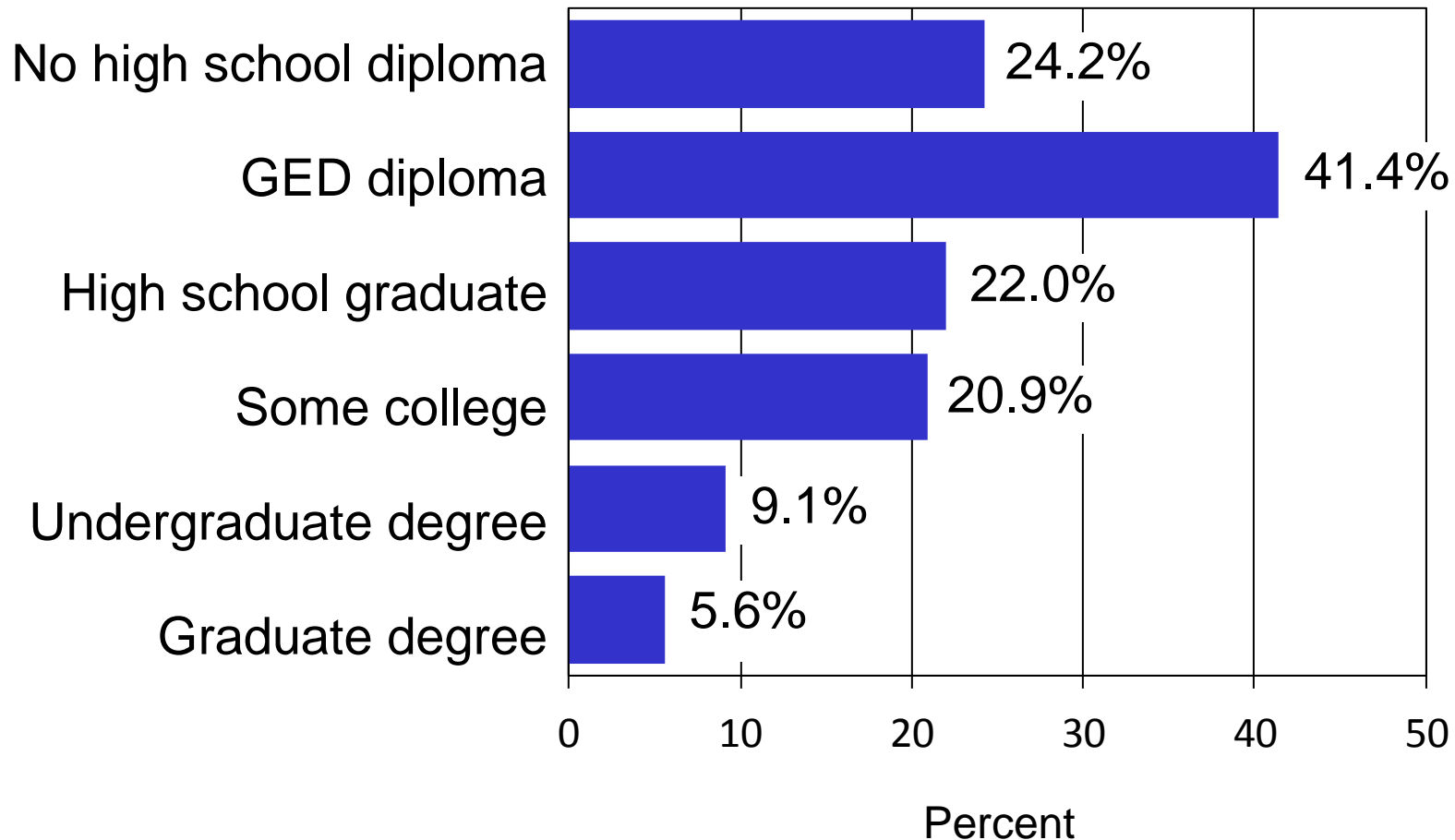


PREVALENCE of ADULT SMOKING, by RACE/ETHNICITY—U.S., 2013





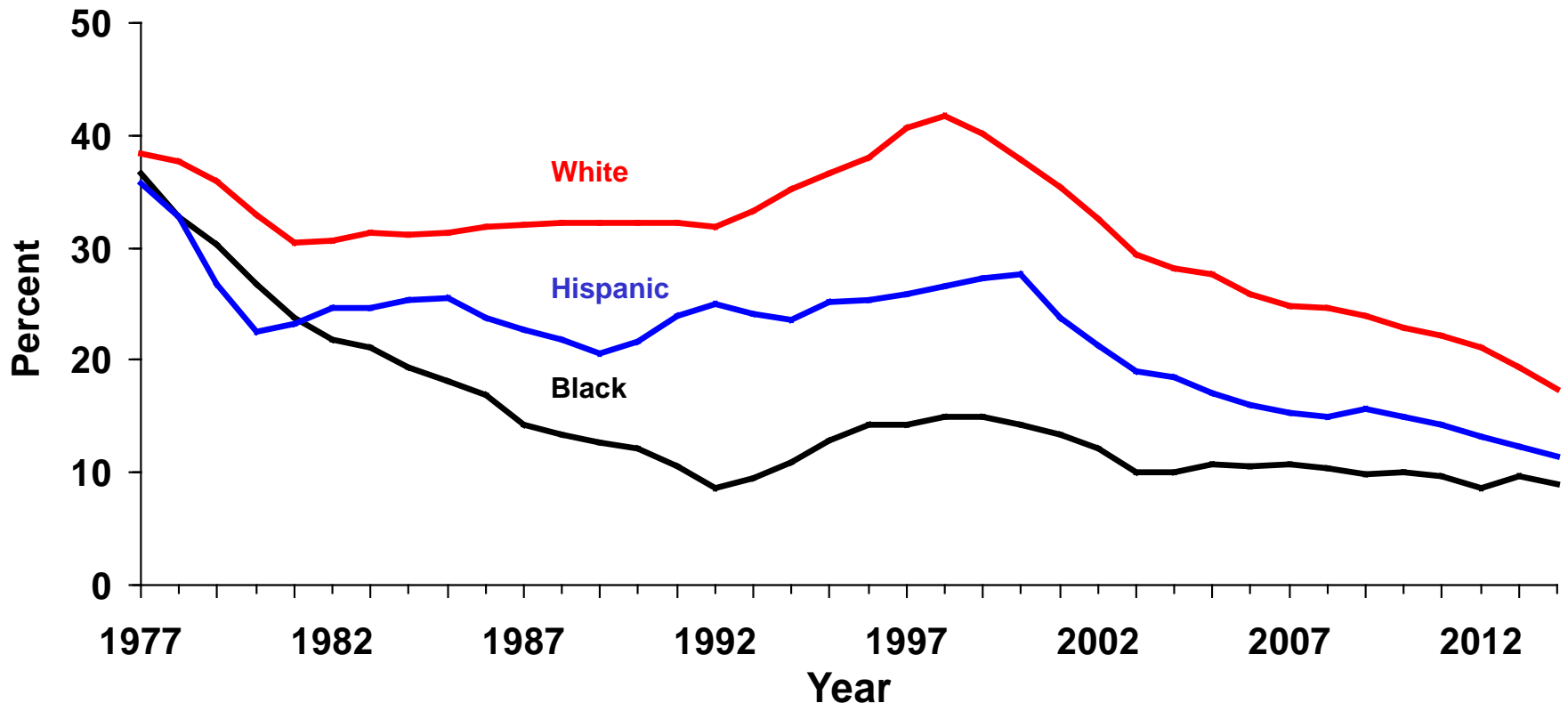
PREVALENCE of ADULT SMOKING, by EDUCATION—U.S., 2013





TRENDS in TEEN SMOKING, by ETHNICITY—U.S., 1977–2014

Trends in cigarette smoking among 12th graders: 30-day prevalence of use





PUBLIC HEALTH versus "BIG TOBACCO"

The biggest opponent to tobacco control efforts is the tobacco industry itself.

Nationally, the tobacco industry is outspending our state tobacco control funding.

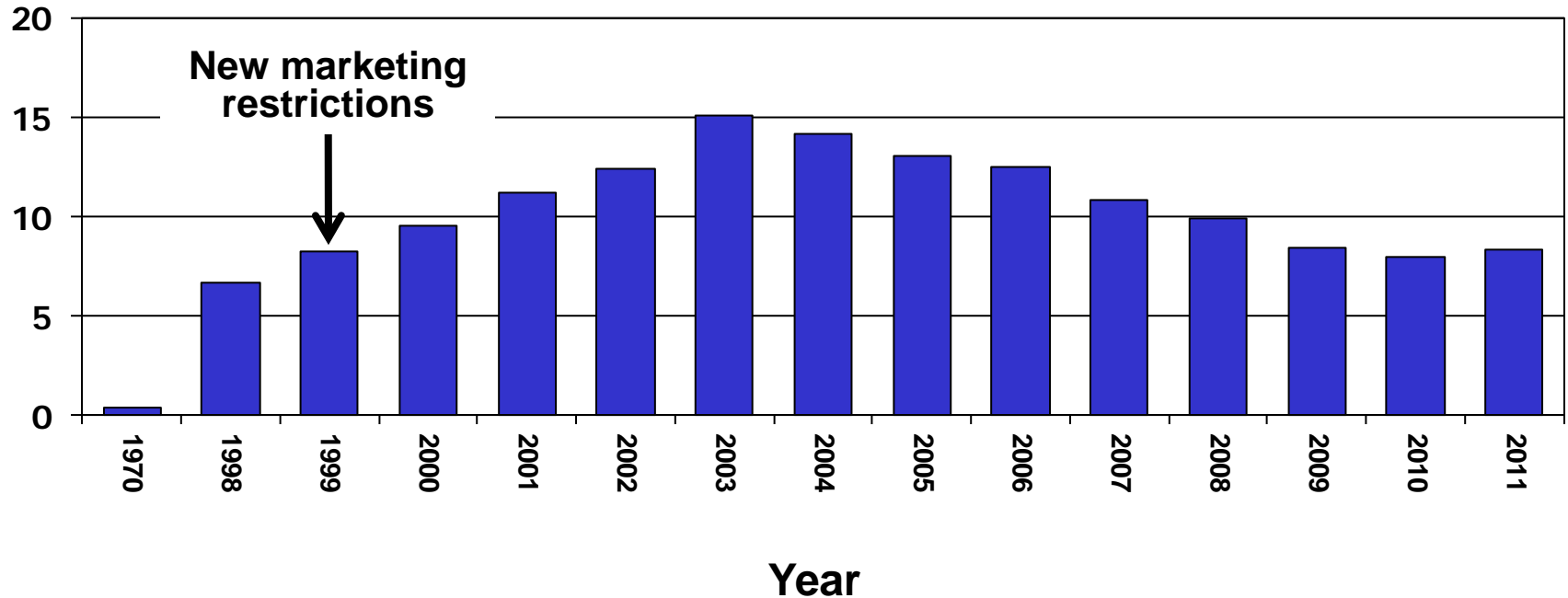
For every \$1 spent by the states, the tobacco industry spends \$23 to market its products.



TOBACCO INDUSTRY MARKETING

- \$8.37 billion spent in the U.S. in 2011
 - \$23.0 million a day

Billions of dollars spent





The TOBACCO INDUSTRY

- For decades, the tobacco industry publicly denied the addictive nature of nicotine and the negative health effects of tobacco.
- **April 14, 1994:** Seven top executives of major tobacco companies state, under oath, that they believe nicotine is not addictive:
<http://www.jeffreywigand.com/7ceos.php>
 - Tobacco industry documents indicate otherwise
 - Documents available at <http://legacy.library.ucsf.edu>
- The cigarette is a heavily engineered product.
 - Designed and marketed to maximize bioavailability of nicotine and addictive potential
 - **Profits over people**



COMPOUNDS in TOBACCO SMOKE

An estimated 4,800 compounds in tobacco smoke, including 11 proven human carcinogens

Gases

- Carbon monoxide
- Hydrogen cyanide
- Ammonia
- Benzene
- Formaldehyde



Particles

- Nicotine
- Nitrosamines
- Lead
- Cadmium
- Polonium-210

Nicotine is the addictive component of tobacco products, but it does NOT cause the ill health effects of tobacco use.



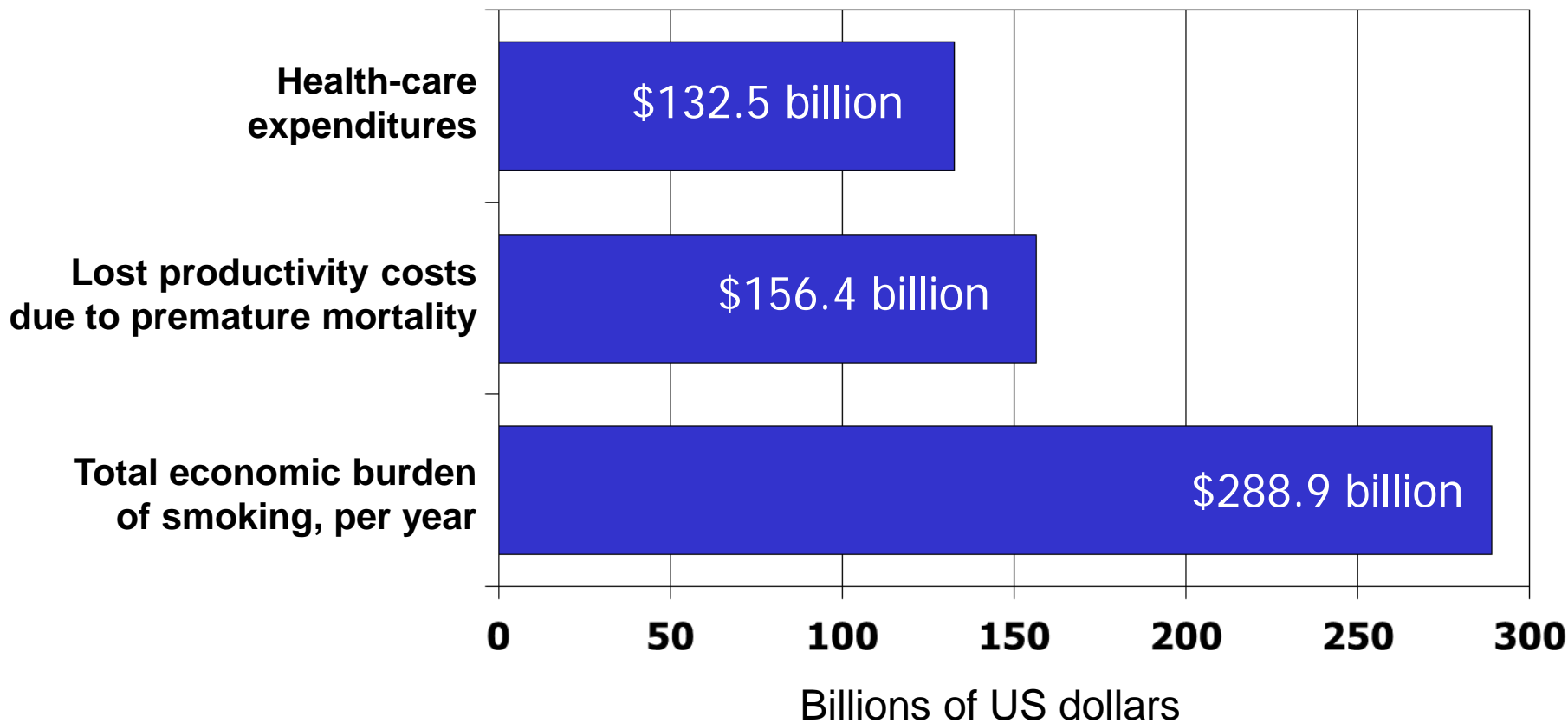
ANNUAL U.S. DEATHS ATTRIBUTABLE to SMOKING, 2005–2009

		Percent of all smoking-attributable deaths
Cardiovascular & metabolic diseases	160,600	33%
Lung cancer	130,659	27%
Pulmonary diseases	113,100	23%
Second-hand smoke	41,280	9%
Cancers other than lung	36,000	7%
Other	1,633	<1%

TOTAL: >480,000 deaths annually



ANNUAL SMOKING-ATTRIBUTABLE ECONOMIC COSTS



Societal costs: \$19.16 per pack of cigarettes smoked



2014 REPORT of the SURGEON GENERAL: HEALTH CONSEQUENCES OF SMOKING

MAJOR DISEASE-RELATED CONCLUSIONS:

- Cigarette smoking is causally linked to diseases of nearly all organs of the body, diminished health status, and harm to the fetus.
 - Additionally, smoking has many adverse effects on the body, such as causing inflammation and impairing immune function.
- Exposure to secondhand smoke is causally linked to cancer, respiratory, and cardiovascular diseases, and to adverse effects on the health of infants and children.
- Disease risks from smoking by women have risen over the last 50 years and for many tobacco-related diseases are now equal to those for men.



HEALTH CONSEQUENCES of SMOKING

■ Cancers

- Bladder/kidney/ureter
- Blood (acute myeloid leukemia)
- Cervix
- Colon/rectum
- Esophagus/stomach
- Liver
- Lung
- Oropharynx/larynx
- Pancreatic

■ Pulmonary diseases

- Asthma
- COPD
- Pneumonia/tuberculosis
- Chronic respiratory symptoms

■ Cardiovascular diseases

- Aortic aneurysm
- Coronary heart disease
- Cerebrovascular disease
- Peripheral vascular disease

■ Reproductive effects

- Reduced fertility in women
- Poor pregnancy outcomes (e.g., congenital defects, low birth weight, preterm delivery)
- Infant mortality

- Other: cataract, diabetes (type 2), erectile dysfunction, impaired immune function, osteoporosis, periodontitis, postoperative complications, rheumatoid arthritis



FORMS of TOBACCO

- Cigarettes
- Smokeless tobacco (chewing tobacco, oral snuff)
- Pipes
- Cigars
- Clove cigarettes
- Bidis
- Hookah (waterpipe smoking)
- Electronic cigarettes (“e-cigarettes”)*



*e-cigarettes are devices that deliver nicotine and are not a form of tobacco.

Image courtesy of the Centers for Disease Control and Prevention / Rick Ward



HEALTH CONSEQUENCES of SMOKELESS TOBACCO USE

Periodontal effects

- Gingival recession
- Bone attachment loss
- Dental caries

Oral leukoplakia

Cancer

- Oral cancer
- Pharyngeal cancer



Oral Leukoplakia

*Image courtesy of Dr. Sol Silverman -
University of California San Francisco*



2006 REPORT of the SURGEON GENERAL: INVOLUNTARY EXPOSURE to TOBACCO SMOKE

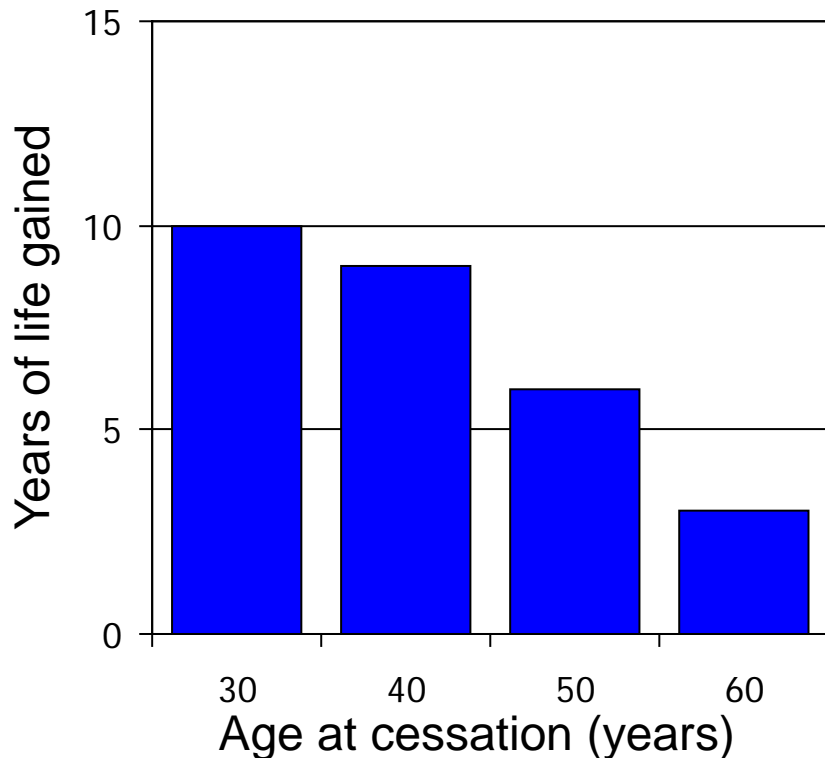
- Second-hand smoke causes premature death and disease in nonsmokers (children and adults)
- Children:
 - Increased risk for sudden infant death syndrome (SIDS), acute respiratory infections, ear problems, and more severe asthma
 - Respiratory symptoms and slowed lung growth if parents smoke
- Adults:
 - Immediate adverse effects on cardiovascular system
 - Increased risk for coronary heart disease and lung cancer
- Millions of Americans are exposed to smoke in their homes/workplaces
- Indoor spaces: eliminating smoking fully protects nonsmokers
 - Separating smoking areas, cleaning the air, and ventilation are ineffective

**There is no
safe level of
second-hand
smoke.**



SMOKING CESSATION: REDUCED RISK of DEATH

- Prospective study of 34,439 male British doctors
- Mortality was monitored for 50 years (1951–2001)



On average, cigarette smokers die approximately 10 years younger than do nonsmokers.

Among those who continue smoking, at least half will die due to a tobacco-related disease.

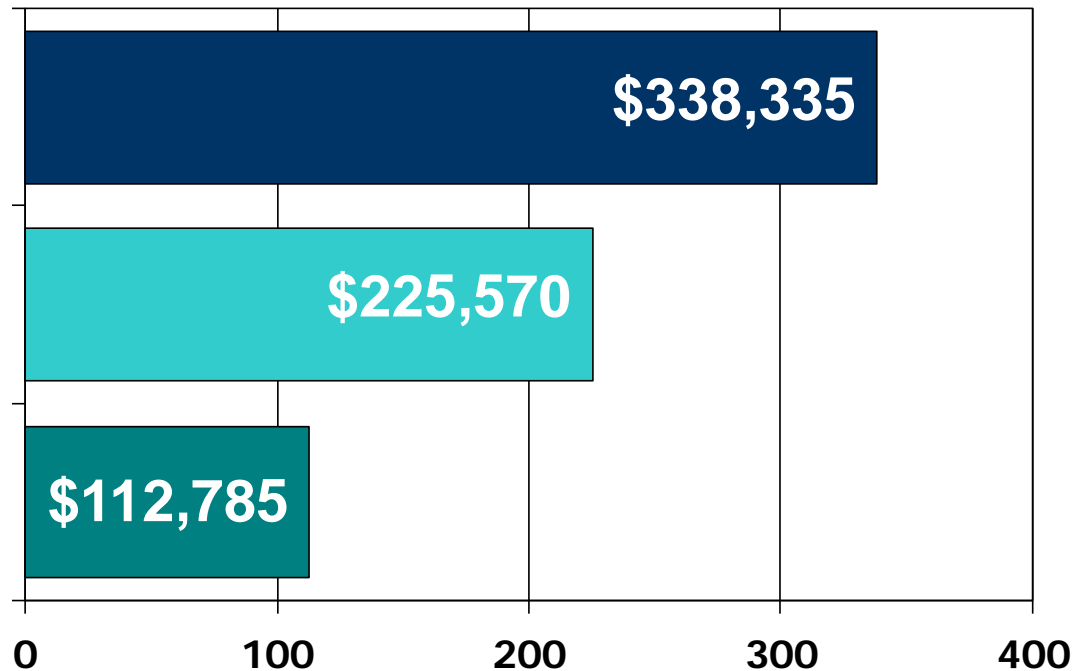


FINANCIAL IMPACT of SMOKING

Buying cigarettes every day for 50 years at \$6.18 per pack*
(does not include interest)



Packs
per
day



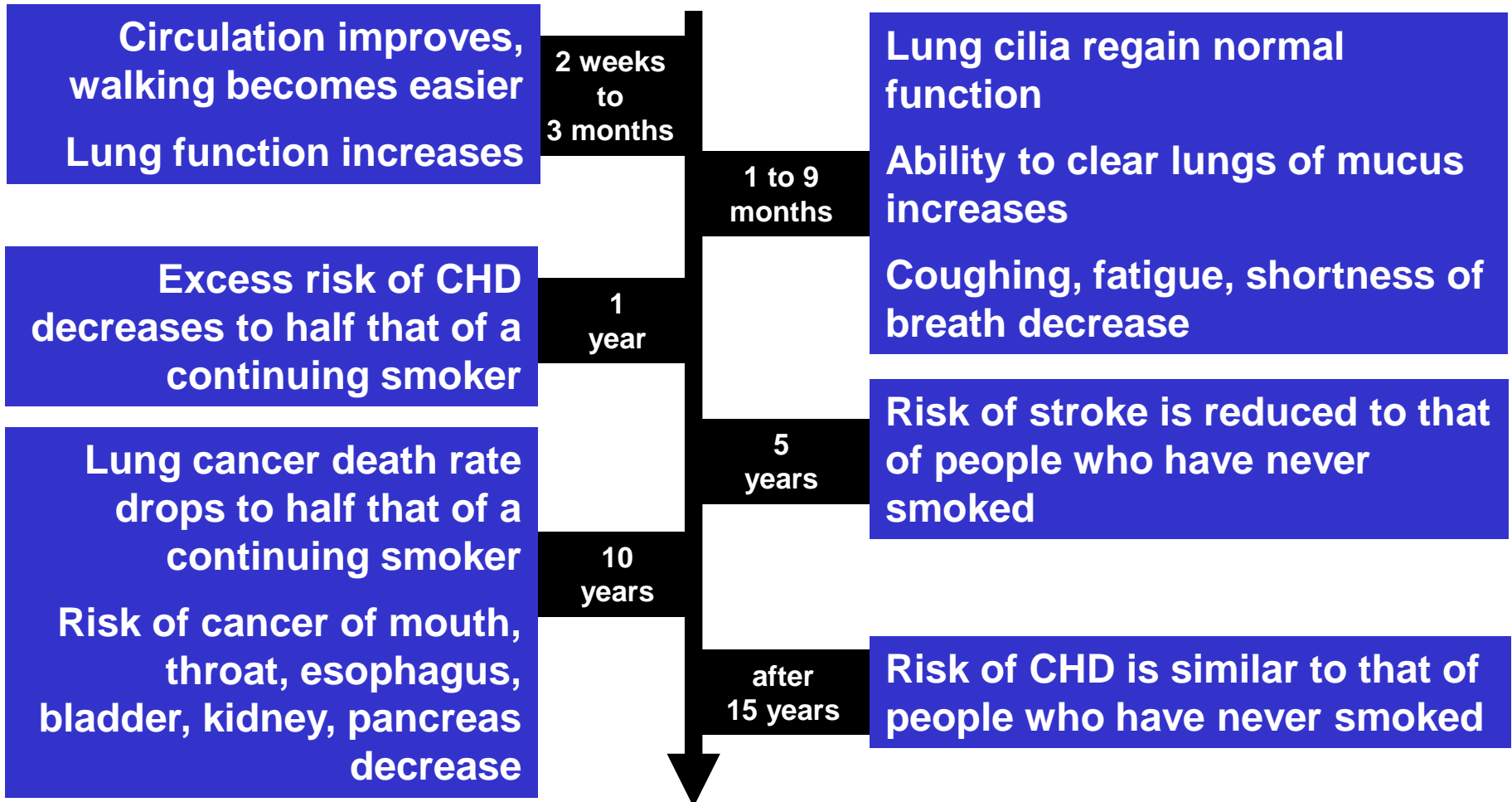
Dollars lost, in thousands

* Average national cost, as of December 2014. Campaign for Tobacco-Free Kids, 2014.



QUITTING: HEALTH BENEFITS

Time Since Quit Date





TOBACCO DEPENDENCE: A 2-PART PROBLEM

Tobacco Dependence

Physiological

The addiction to nicotine



Treatment

Medications for cessation



Behavioral

The habit of using tobacco



Treatment

Behavior change program

Treatment should address the physiological **and** the behavioral aspects of dependence.



PROBLEM #1: ADDICTION TO NICOTINE



WHAT IS ADDICTION?

"Compulsive drug use, without medical purpose, in the face of negative consequences"

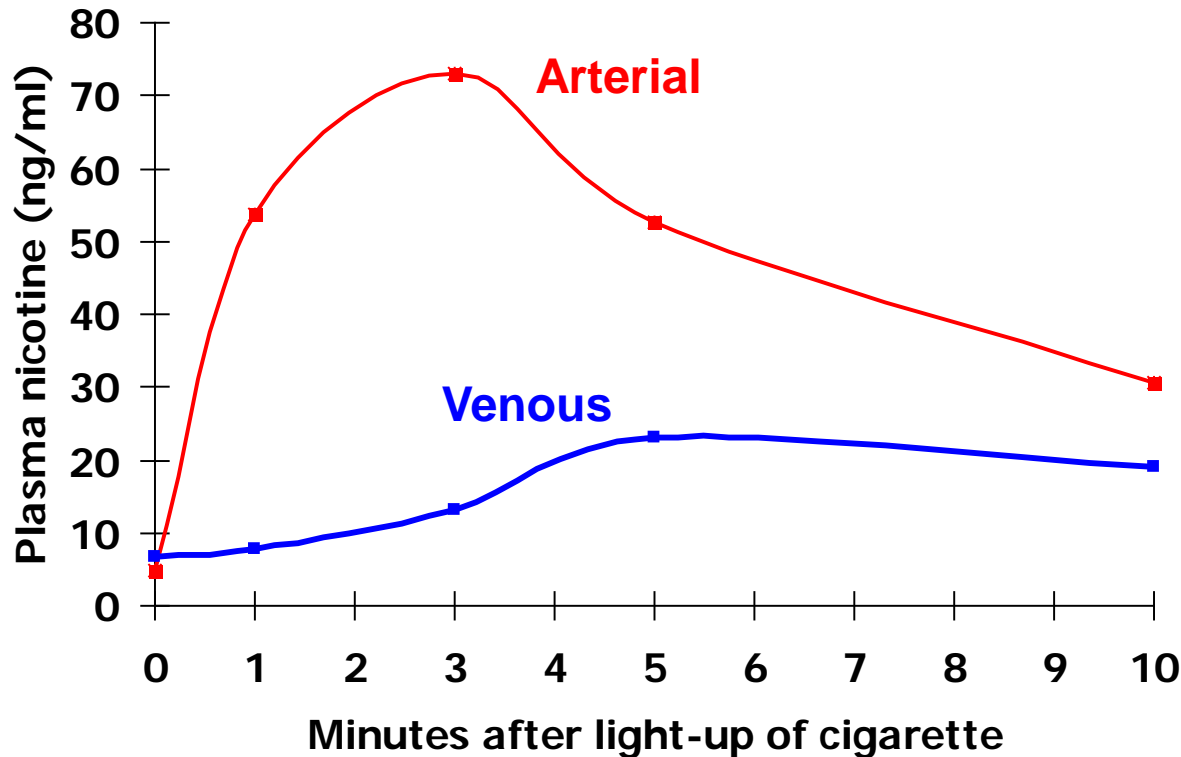
Alan I. Leshner, Ph.D.

Former Director, National Institute on Drug Abuse
National Institutes of Health

Nicotine addiction is a chronic condition with a biological basis.



NICOTINE DISTRIBUTION



Nicotine reaches the brain within 10–20 seconds.

Dopamine Reward Pathway

Prefrontal cortex

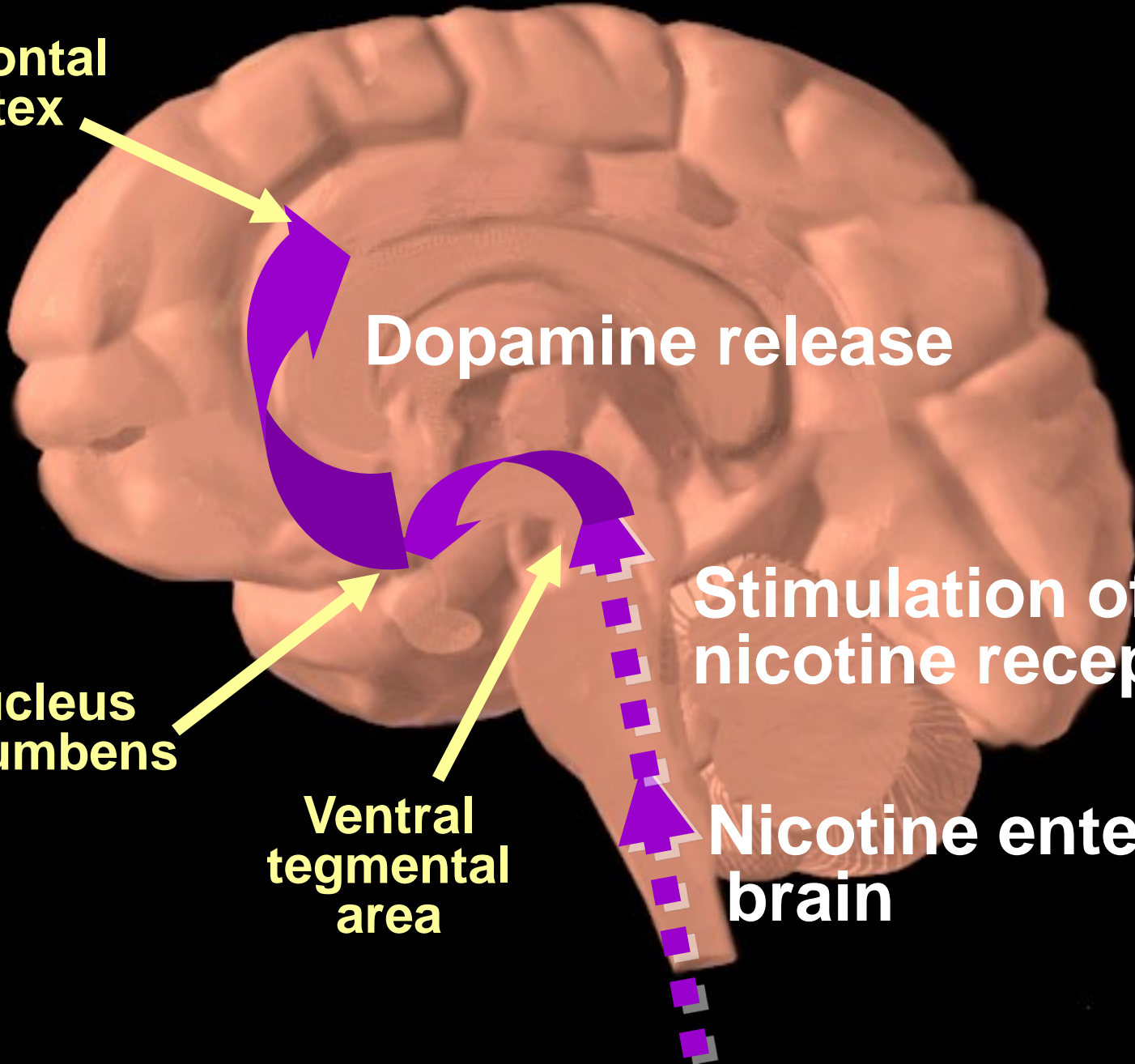
Dopamine release

Nucleus accumbens

Stimulation of nicotine receptors

Ventral tegmental area

Nicotine enters brain





NICOTINE PHARMACODYNAMICS: WITHDRAWAL EFFECTS

- Irritability/frustration/anger
- Anxiety
- Difficulty concentrating
- Restlessness/impatience
- Depressed mood/depression
- Insomnia
- Impaired performance
- Increased appetite/weight gain
- Cravings

Most symptoms manifest within the first 1–2 days, peak within the first week, and subside within 2–4 weeks.



NICOTINE ADDICTION

- Tobacco users maintain a minimum serum nicotine concentration in order to
 - Prevent withdrawal symptoms
 - Maintain pleasure/arousal
 - Modulate mood
- Users self-titrate nicotine intake by
 - Smoking/dipping more frequently
 - Smoking more intensely
 - Obstructing vents on low-nicotine brand cigarettes



FDA-APPROVED MEDICATIONS for CESSATION

Nicotine polacrilex gum

- Nicorette (OTC)
- Generic nicotine gum (OTC)

Nicotine lozenge

- Nicorette Lozenge (OTC)
- Nicorette Mini Lozenge (OTC)
- Generic nicotine lozenge (OTC)

Nicotine transdermal patch

- NicoDerm CQ (OTC)
- Generic nicotine patches (OTC, Rx)

Nicotine nasal spray

- Nicotrol NS (Rx)

Nicotine inhaler

- Nicotrol (Rx)

Bupropion SR (Zyban)

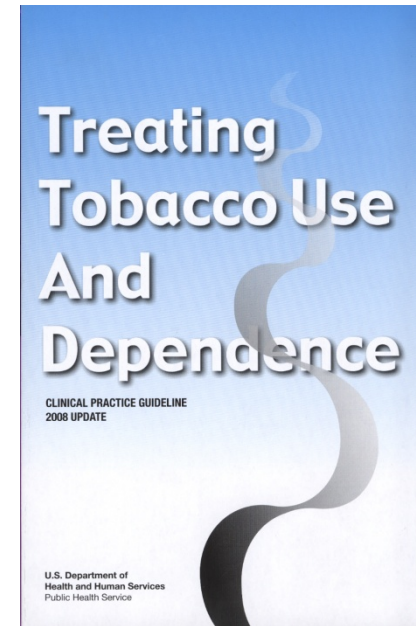
Varenicline (Chantix)

These are the only medications that are approved for smoking cessation.



PHARMACOTHERAPY

“Clinicians should encourage all patients attempting to quit to use effective medications for tobacco dependence treatment, except where contraindicated or for specific populations* for which there is insufficient evidence of effectiveness.”



* Includes pregnant women, smokeless tobacco users, light smokers, and adolescents.

Medications significantly improve success rates.

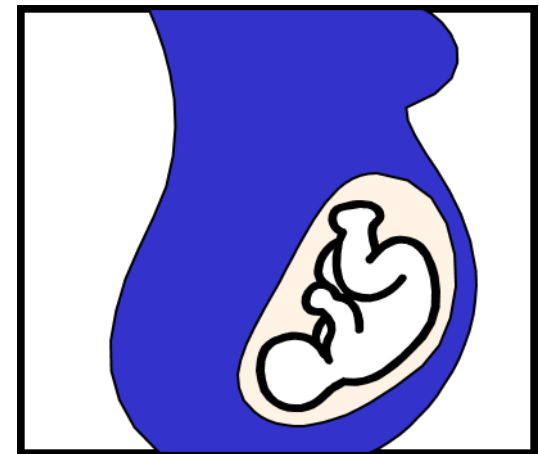
Fiore et al. (2008). *Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline*. Rockville, MD: USDHHS, PHS, May 2008.



PHARMACOTHERAPY: USE in PREGNANCY

- The Clinical Practice Guideline makes no recommendation regarding use of medications in pregnant smokers
 - Insufficient evidence of effectiveness
- Category C: varenicline, bupropion SR
- Category D: prescription formulations of NRT

“Because of the serious risks of smoking to the pregnant smoker and the fetus, whenever possible pregnant smokers should be offered person-to-person psychosocial interventions that exceed minimal advice to quit.”





PHARMACOTHERAPY: OTHER SPECIAL POPULATIONS

Pharmacotherapy is **not** recommended for:

- Smokeless tobacco users
 - No FDA indication for smokeless tobacco cessation
- Individuals smoking fewer than 10 cigarettes per day
- Adolescents
 - Nonprescription sales (patch, gum, lozenge) are restricted to adults ≥ 18 years of age
 - NRT use in minors requires a prescription

Recommended treatment is behavioral counseling.



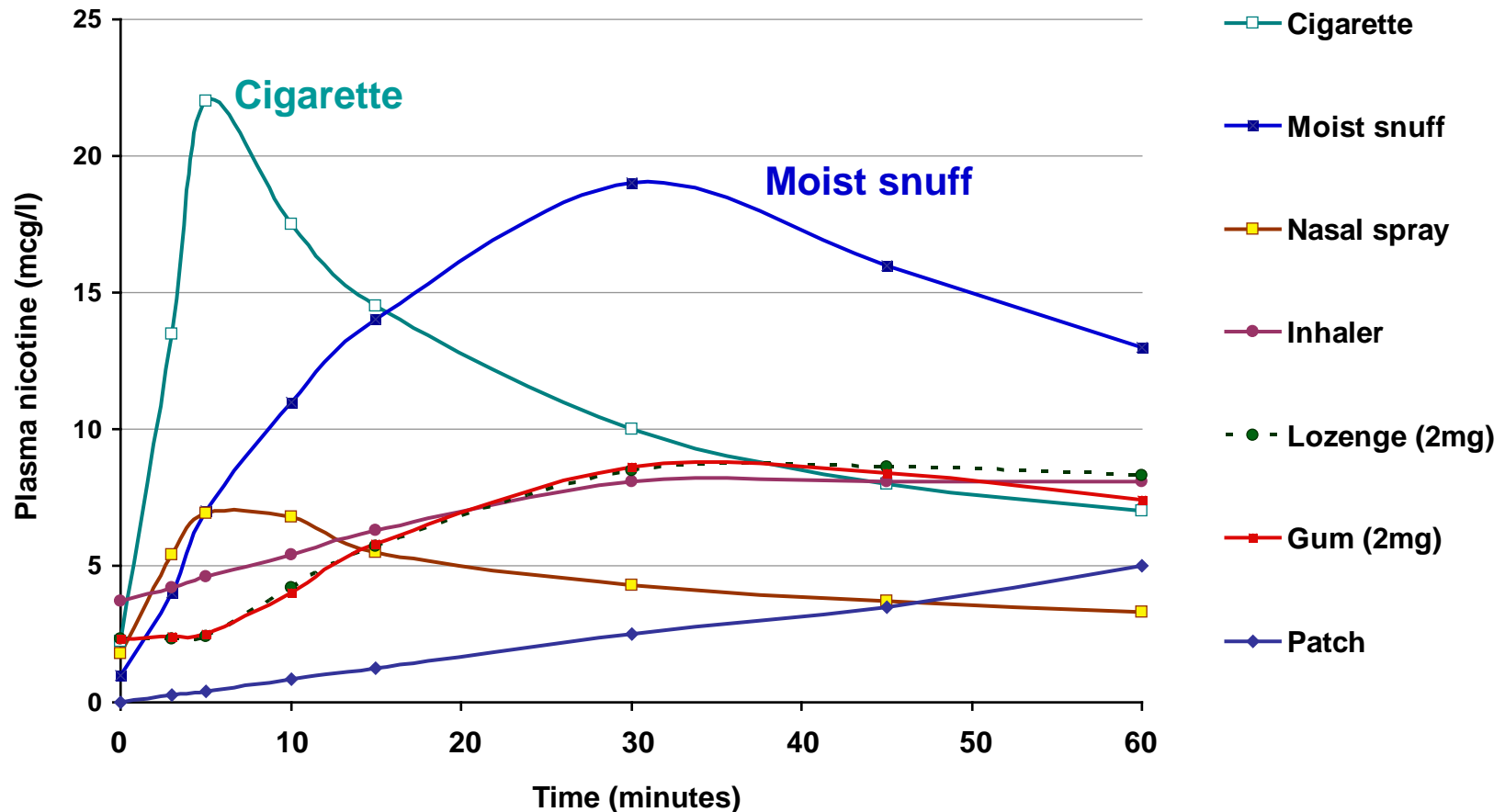
NRT: RATIONALE for USE

- Reduces physical withdrawal from nicotine
- Eliminates the immediate, reinforcing effects of nicotine that is rapidly absorbed via tobacco smoke
- Allows patient to focus on behavioral and psychological aspects of tobacco cessation

NRT products approximately doubles quit rates.



PLASMA NICOTINE CONCENTRATIONS for NICOTINE-CONTAINING PRODUCTS





NICOTINE GUM

Nicorette; generics

- Resin complex
 - Nicotine
 - Polacrillin



- Sugar-free chewing gum base
- Contains buffering agents to enhance buccal absorption of nicotine
- Available: 2 mg, 4 mg; original, cinnamon, fruit and mint (various) flavors



NICOTINE LOZENGE

Nicorette Lozenge and Nicorette Mini Lozenge; generics

- Nicotine polacrilex formulation
 - Delivers ~25% more nicotine than equivalent gum dose
- Sugar-free mint, cherry flavors
- Contains buffering agents to enhance buccal absorption of nicotine
- Available: 2 mg, 4 mg





TRANSDERMAL NICOTINE PATCH

NicoDerm CQ; generic

- Nicotine is well absorbed across the skin
- Delivery to systemic circulation avoids hepatic first-pass metabolism
- Plasma nicotine levels are lower and fluctuate less than with smoking





NICOTINE NASAL SPRAY

Nicotrol NS

- Aqueous solution of nicotine in a 10-ml spray bottle
- Each metered dose actuation delivers
 - 50 mcL spray
 - 0.5 mg nicotine
- ~ 100 doses/bottle
- Rapid absorption across nasal mucosa

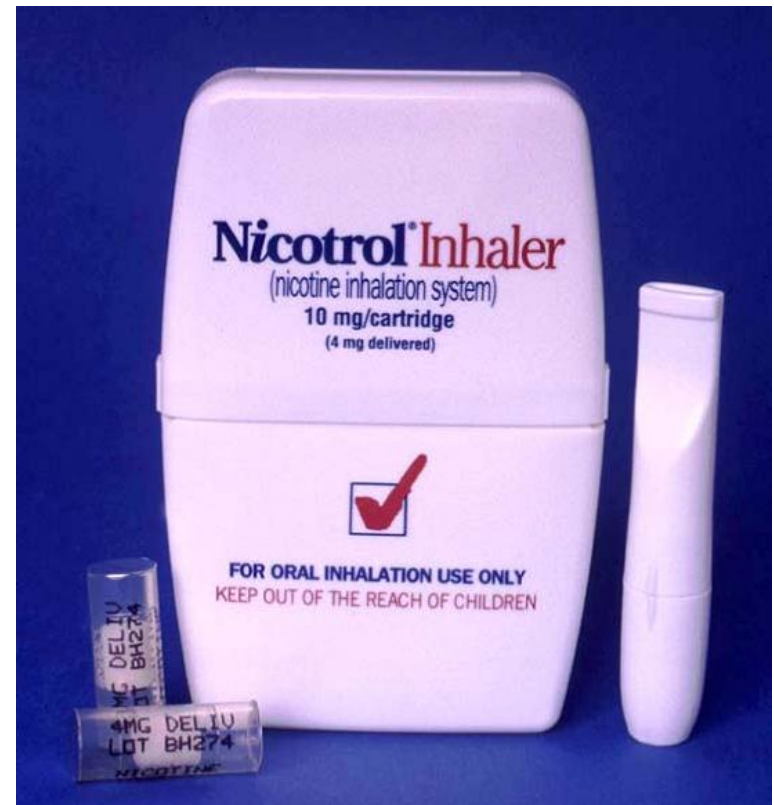




NICOTINE INHALER

Nicotrol Inhaler

- Nicotine inhalation system consists of:
 - Mouthpiece
 - Cartridge with porous plug containing 10 mg nicotine and 1 mg menthol
- Delivers 4 mg nicotine vapor, absorbed across buccal mucosa

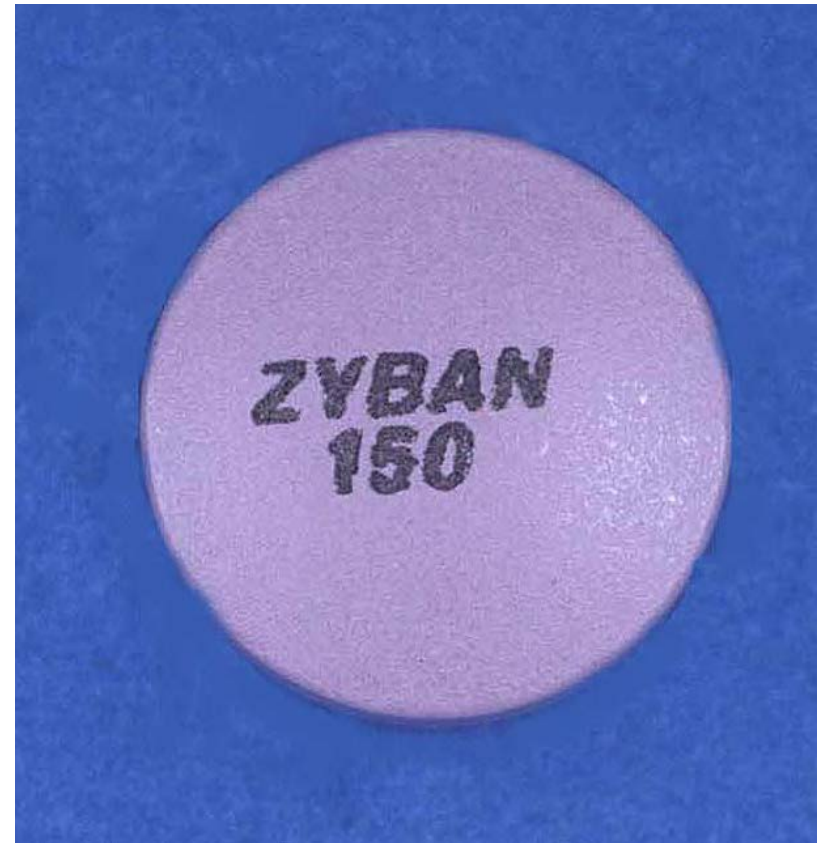




BUPROPION SR

Zyban; generics

- Nonnicotine cessation aid
- Sustained-release antidepressant
- Oral formulation





VARENICLINE

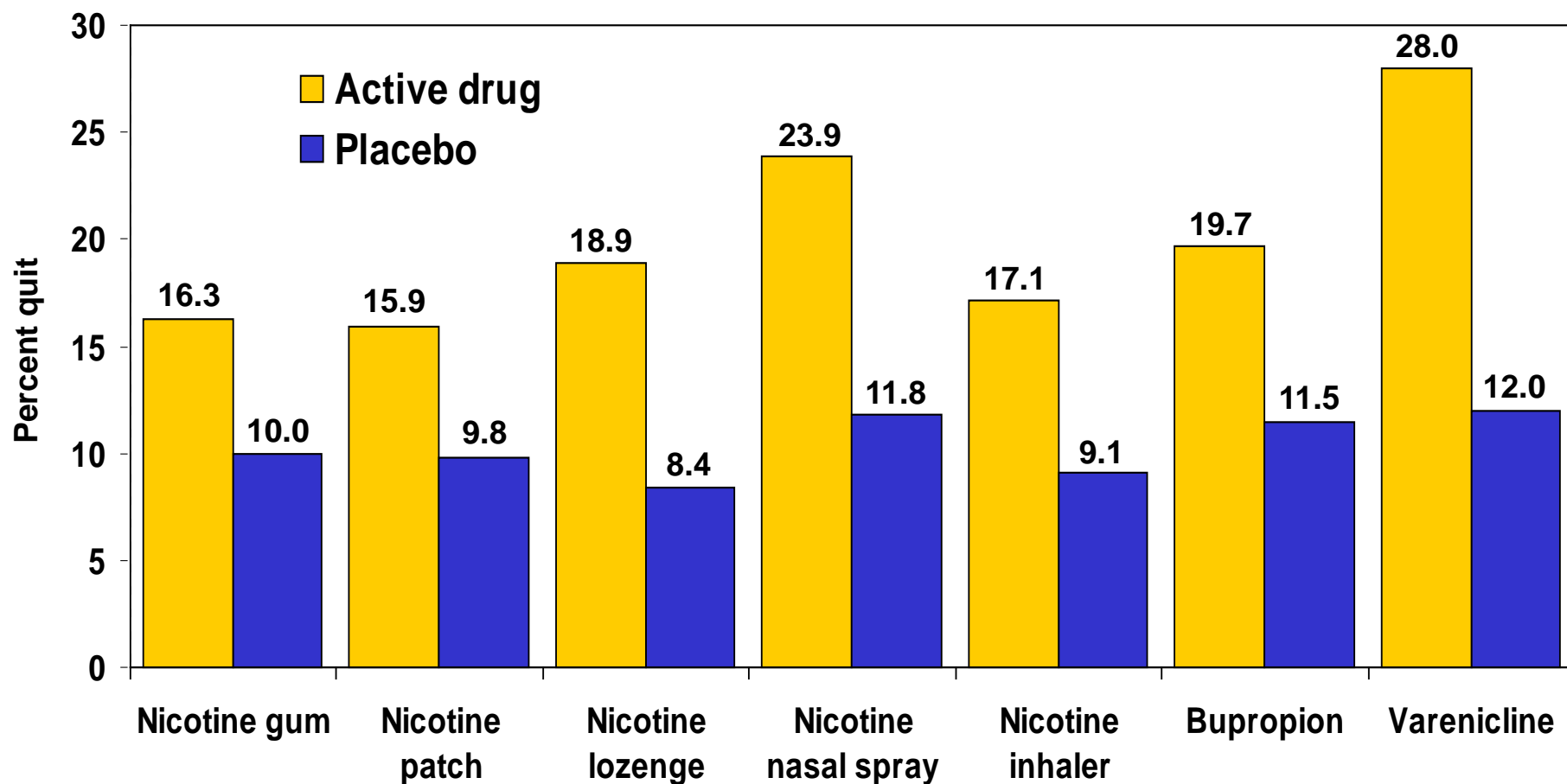
Chantix

- Nonnicotine cessation aid
- Partial nicotinic receptor agonist
- Oral formulation





LONG-TERM (≥ 6 month) QUIT RATES for AVAILABLE CESSATION MEDICATIONS



Data adapted from Cahill et al. (2012). *Cochrane Database Syst Rev*; Stead et al. (2012). *Cochrane Database Syst Rev*; Hughes et al. (2014). *Cochrane Database Syst Rev*



COMBINATION PHARMACOTHERAPY

Regimens with enough evidence to be 'recommended' first-line

■ **Combination NRT**

Long-acting formulation (patch)

- Produces relatively constant levels of nicotine

PLUS

Short-acting formulation (gum, inhaler, nasal spray)

- Allows for acute dose titration as needed for nicotine withdrawal symptoms

■ **Bupropion SR + Nicotine Patch**



IDENTIFY KEY ISSUES to STREAMLINE PRODUCT SELECTION*

- Do you prefer a prescription or non-prescription medication?
- Would it be a challenge for you to take a medication frequently throughout the day, e.g., a minimum of 9 times?
 - With the exception of the nicotine patch, all NRT formulations require frequent dosing throughout the day.
 - If patient is unable to adhere to the recommended dosing, these products should be ruled out as monotherapy because they will be ineffective.

Asking these two questions will significantly reduce the time required for product selection.

* Product-specific screening, for warnings/precautions/contraindications and personal preferences, is also essential.



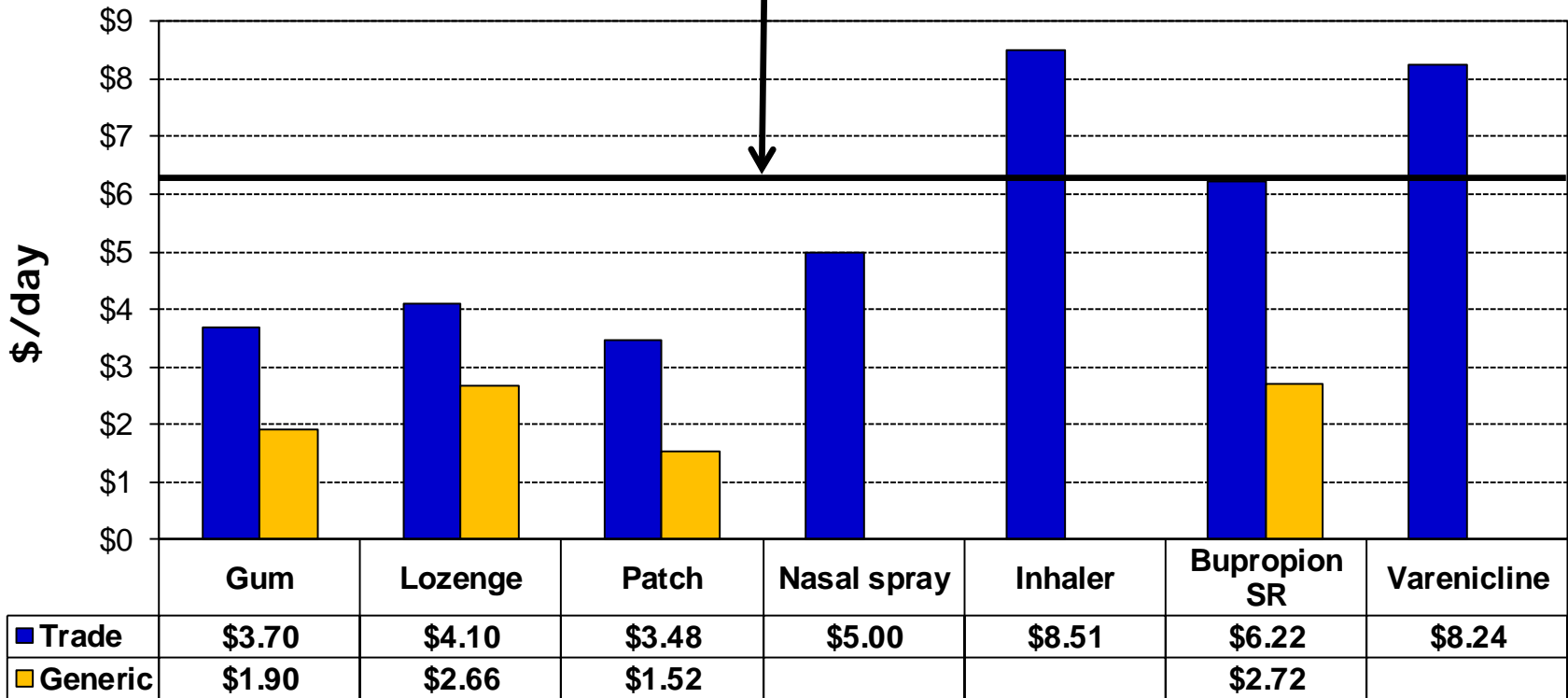
ADHERENCE IS KEY to QUITTING

- Promote adherence with prescribed regimens.
- Use according to dosing schedule, NOT as needed.
- Consider telling the patient:
 - “When you use a cessation product it is important to read all the directions thoroughly before using the product. The products work best in alleviating withdrawal symptoms when used correctly, and according to the recommended dosing schedule.”



COMPARATIVE DAILY COSTS of PHARMACOTHERAPY

Average \$/pack of cigarettes, \$6.18





Medications are effective, but they are just one component of comprehensive treatment for tobacco cessation.

Behavior change is equally important.

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PROBLEM #2: CHANGING BEHAVIOR



TOBACCO CESSATION REQUIRES BEHAVIOR CHANGE

- Fewer than 5% of people who quit without assistance are successful in quitting for more than a year.
- Few patients adequately PREPARE and PLAN for their quit attempt.
- Many patients do not understand the need to change behavior
- Patients think they can just “make themselves quit”

Behavioral counseling is a key component of treatment for tobacco use and dependence.



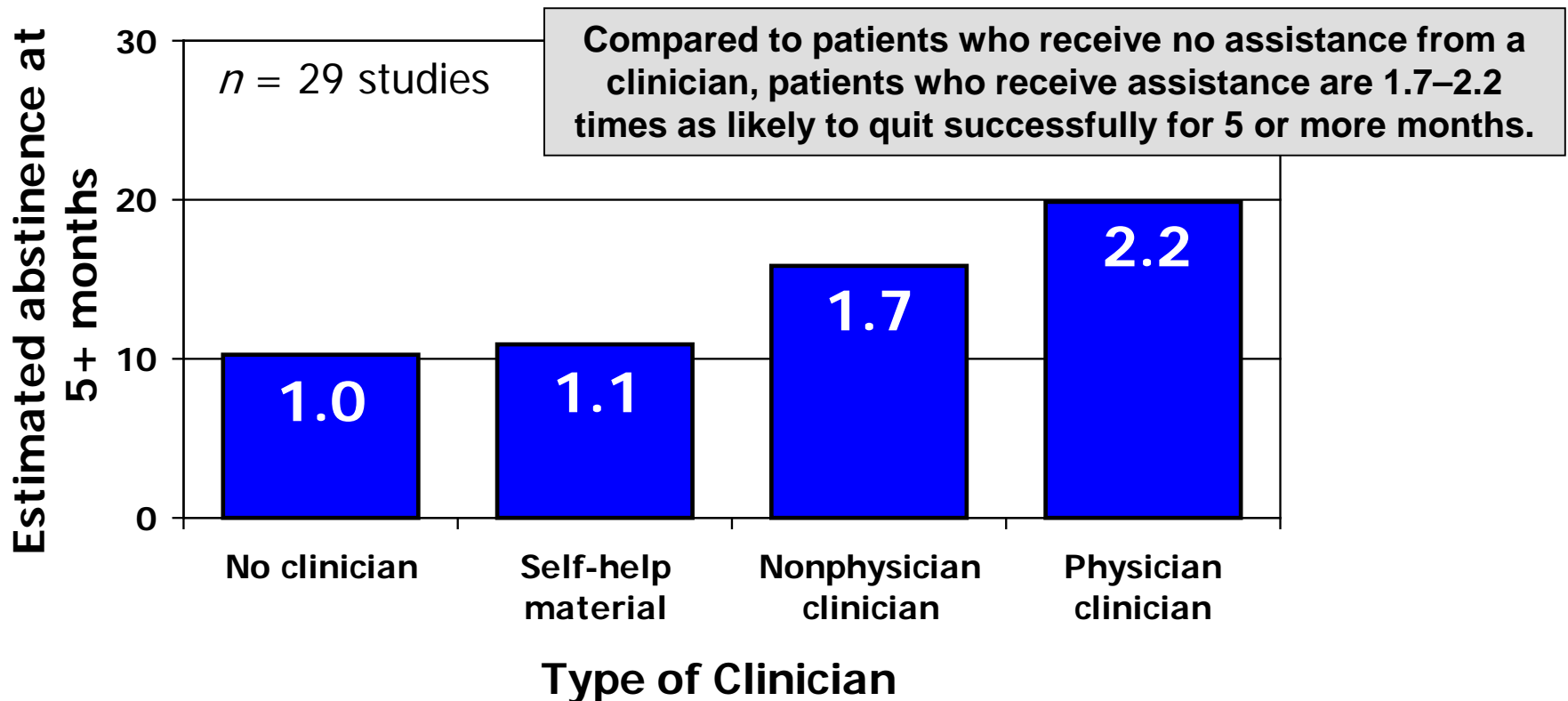
CHANGING BEHAVIOR (cont'd)

- Often, patients automatically smoke in the following situations:
 - When drinking coffee
 - While driving in the car
 - When bored
 - While stressed
 - While at a bar with friends
 - After meals
 - During breaks at work
 - While on the telephone
 - While with specific friends or family members who use tobacco
- Behavioral counseling helps patients learn to cope with these difficult situations without having a cigarette.



EFFECTS of CLINICIAN INTERVENTIONS

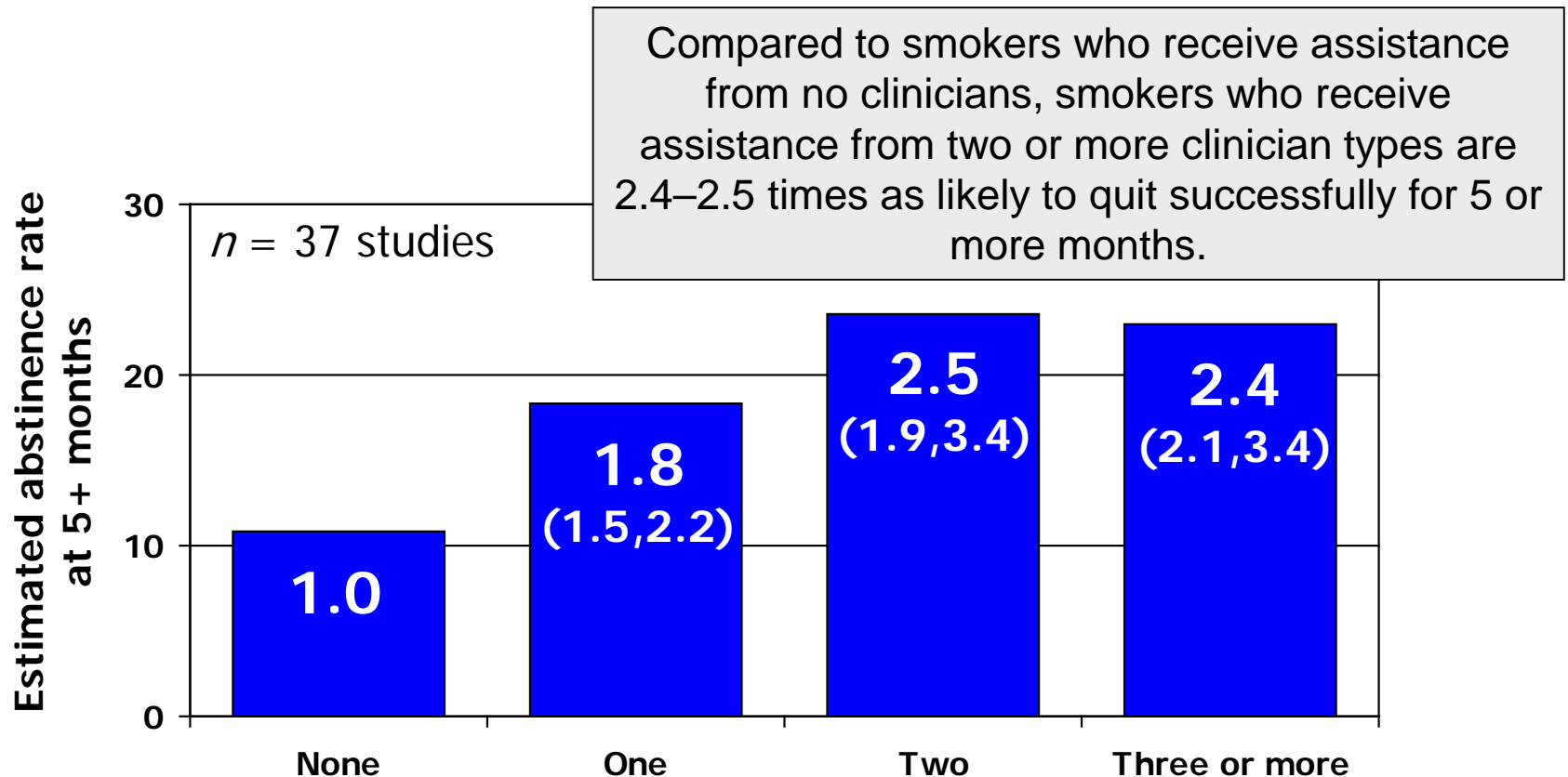
With help from a clinician, the odds of quitting approximately doubles.



Fiore et al. (2008). *Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline*. Rockville, MD: USDHHS, PHS, May 2008.

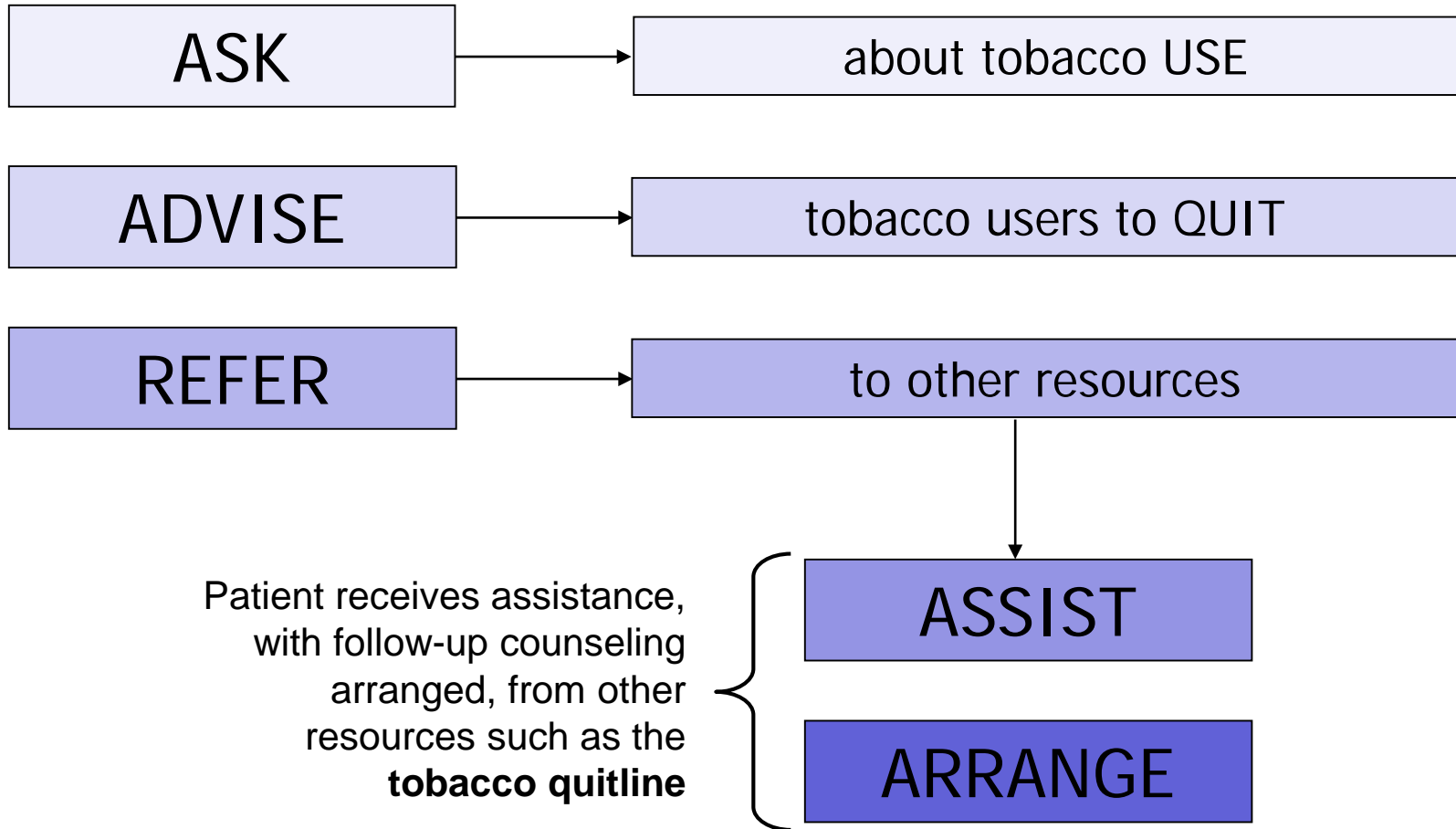


NUMBER of CLINICIAN TYPES CAN MAKE a DIFFERENCE, too





BRIEF COUNSELING: ASK, ADVISE, REFER





STEP 1: ASK

ASK about tobacco use

- “Do you ever smoke or use other types of tobacco or nicotine, such as e-cigarettes?”
 - “I take time to ask all of my patients about tobacco use—because it’s important.”
- “Condition X often is caused or worsened by smoking. 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 2: ADVISE

ADVISE tobacco users to quit (clear, strong, personalized)

- "It's important that you quit as soon as possible, and I can help you."
- "Cutting down while you are ill is not enough."
- "Occasional or light smoking is still harmful."
- "I realize that quitting is difficult. It 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 will work with you to design a specialized treatment plan."



STEP 3: REFER

- **REFER** tobacco users to other resources

Referral options:

- A doctor, nurse, pharmacist, or other clinician, for additional counseling
- A local group program
- The support program provided free with each smoking cessation medication
- The toll-free telephone quit line: **1-800-QUIT-NOW**



BRIEF COUNSELING: ASK, ADVISE, REFER (cont'd)

- Brief interventions have been shown to be effective
- In the absence of time or expertise:
 - Ask, advise, and refer to other resources, such as local group programs or the toll-free quitline **1-800-QUIT-NOW**

Take Control
1-800-QUIT-NOW
Call. It's free. It works.
1-800-784-8669
www.smokefree.gov



This brief
intervention can be
achieved in less
than 1 minute.



WHAT ARE "TOBACCO QUITLINES"?

- Tobacco cessation counseling, provided at no cost via telephone to all Americans
- Staffed by highly trained specialists
- Up to 4–6 personalized sessions (varies by state)
- Some state quitlines offer pharmacotherapy at no cost (or reduced cost)
- Up to 30% success rate for patients who complete sessions

Most health-care providers, and most patients, are not familiar with tobacco quitlines.



WHEN a PATIENT CALLS the QUITLINE

- Caller is routed to language-appropriate staff
- Brief Questionnaire
 - Contact and demographic information
 - Smoking behavior
- Choice of services
 - Individualized telephone counseling
 - Quitting literature mailed within 24 hrs
 - Referral to local programs, as appropriate



Quitlines have broad reach and are recommended as an effective strategy in the 2008 Clinical Practice Guideline.



MAKE a COMMITMENT...

Address tobacco use

with all patients.

At a minimum,

make a commitment to incorporate brief tobacco interventions as part of routine patient care.

Ask, Advise, and Refer.



WHY SHOULD CLINICIANS ADDRESS TOBACCO?

- Tobacco users expect to be encouraged to quit by health professionals.
- Screening for tobacco use and providing tobacco cessation counseling are positively associated with patient satisfaction (Barzilai et al., 2001; Conroy et al., 2005).

Failure to address tobacco use tacitly implies that quitting is not important.



The RESPONSIBILITY of HEALTH PROFESSIONALS

It is **inconsistent**
to provide health care and
—at the same time—
remain silent (or inactive)
about a major health risk.

TOBACCO CESSATION
is an important component of
THERAPY.



DR. GRO HARLEM BRUNTLAND, FORMER DIRECTOR-GENERAL of the WHO:

“If we do not act decisively, a hundred years from now our grandchildren and their children will look back and seriously question how people claiming to be committed to public health and social justice allowed the tobacco epidemic to unfold unchecked.”

