

# What to Do with a Patient Who Smokes

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Smoke-Free Homes Symposium

April 16, 2005

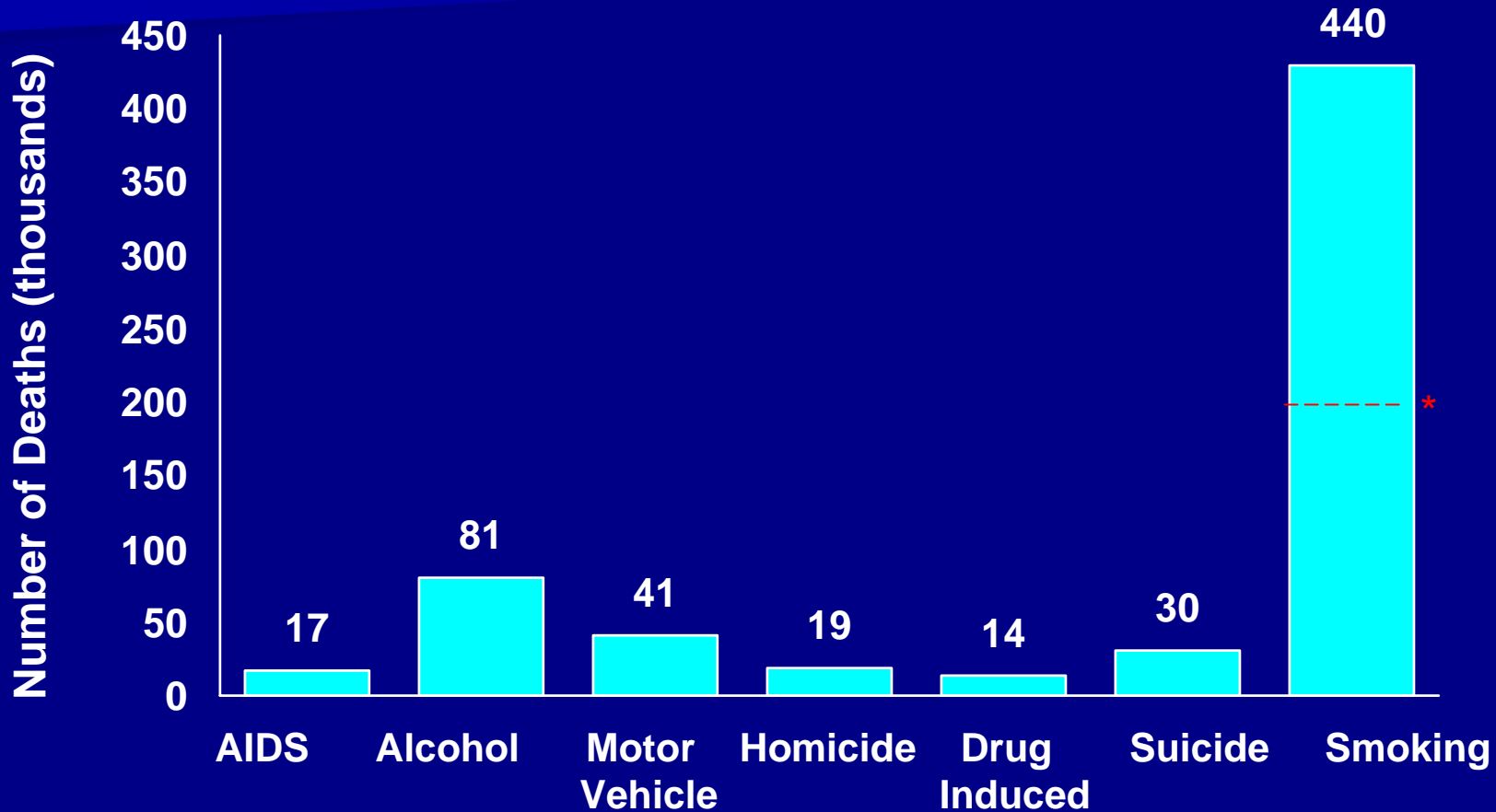
# Topics for Today

- Tobacco's harm
- Cessation
- Tobacco control strategies
- Second hand smoke

# Tobacco's Deadly Toll

- 440,000 deaths in the U.S. each year
- 4.8 million deaths world wide each year
- 10 million deaths estimated by year 2030
- 8.6 million disabled from tobacco in the U.S. alone

# Comparative Causes of Annual Deaths in the United States



\* Also suffer from mental illness and/or substance abuse

Source: CDC

# Annual U.S. Deaths Attributable to Smoking, 1995–1999

Cardiovascular diseases	149,000	34%
Lung cancer	125,000	28%
Respiratory diseases	98,000	22%
Second-hand	53,000	9%
Cancers other than	31,000	7%
Other	2,000	<1%

**TOTAL: more than 440,000 deaths annually**

# Health Consequences of Smoking

## ■ Cancers

- Lung
- Laryngeal, pharyngeal, oral cavity, esophagus
- Pancreatic
- Bladder and kidney
- Cervical and endometrial
- Gastric
- Acute myeloid leukemia

- Reduce fertility in women, poor pregnancy outcomes, low birth weight babies, sudden infant death syndrome

## ■ Cardiovascular diseases

- Subclinical atherosclerosis
- Coronary heart disease
- Stroke
- Abdominal aortic aneurysm

## ■ Respiratory diseases

- Acute respiratory illnesses, e.g., pneumonia
- Chronic respiratory diseases, e.g., COPD

## ■ Cataract

## ■ Periodontitis

# Compounds in Tobacco Smoke



An estimated 4,800 compounds in tobacco smoke

## Gases

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

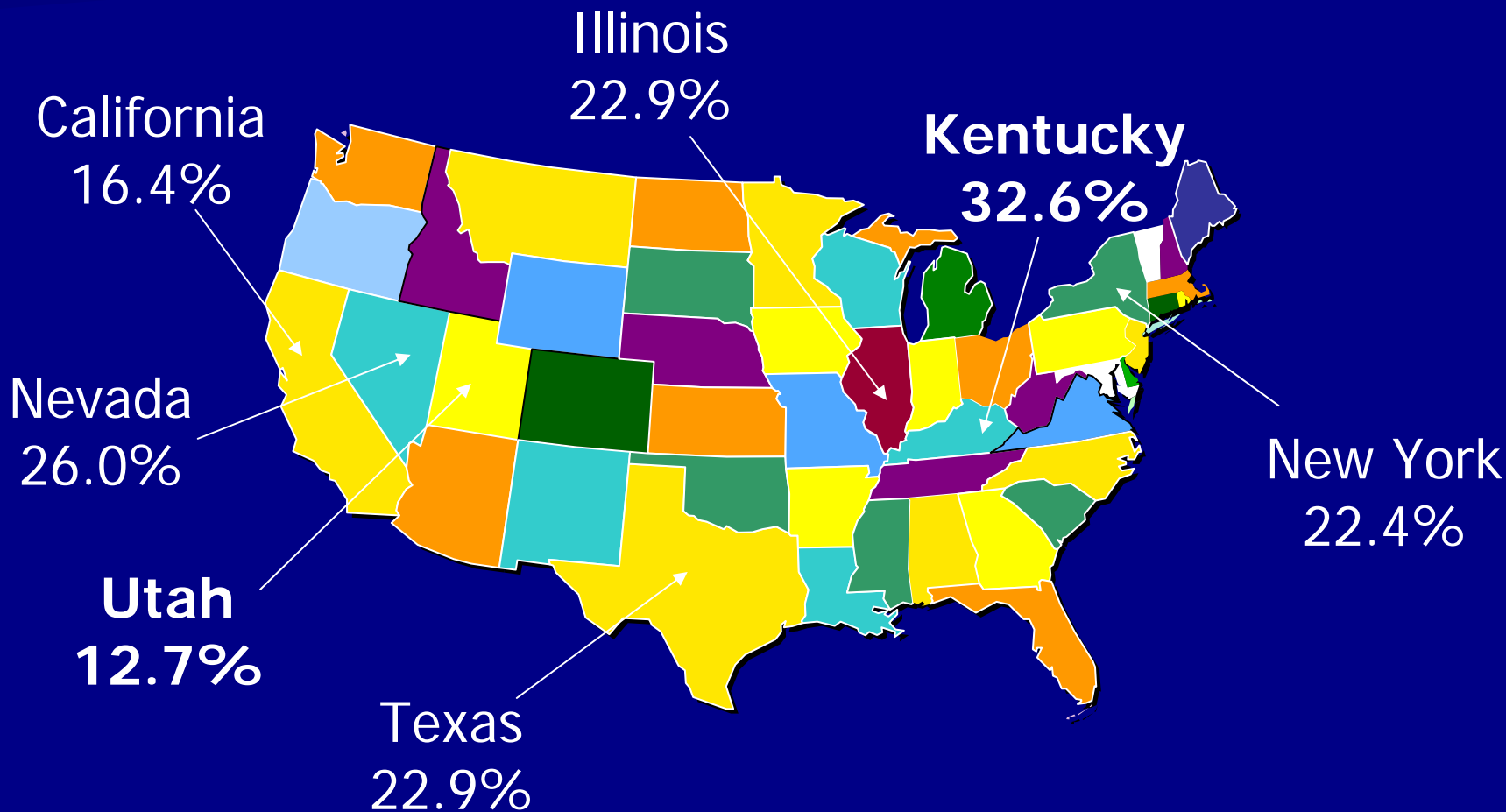


## Particles

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

**11 proven human carcinogens**

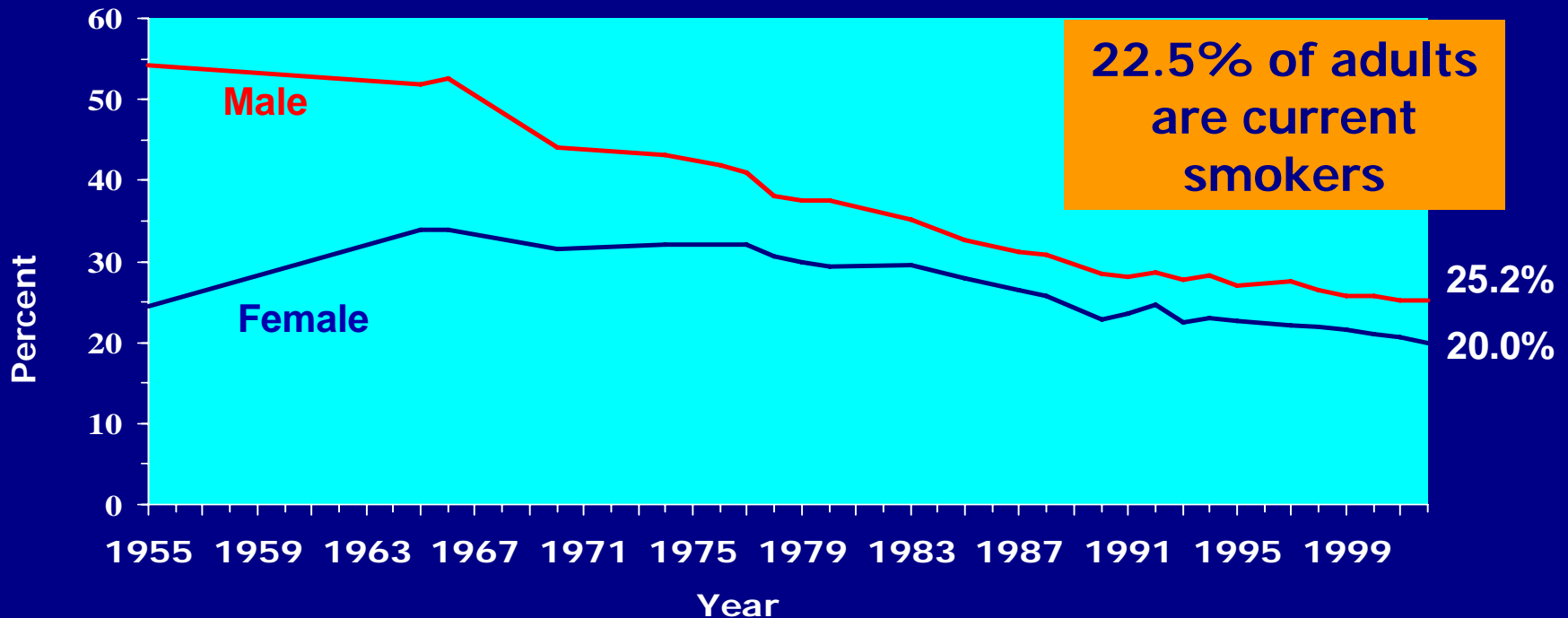
# State-Specific Prevalence of Smoking Among Adults, 2002



Centers for Disease Control and Prevention. *MMWR* 2004;52:1277–1280.

# Trends in Adult Smoking, by Sex in the U.S., 1955–2002

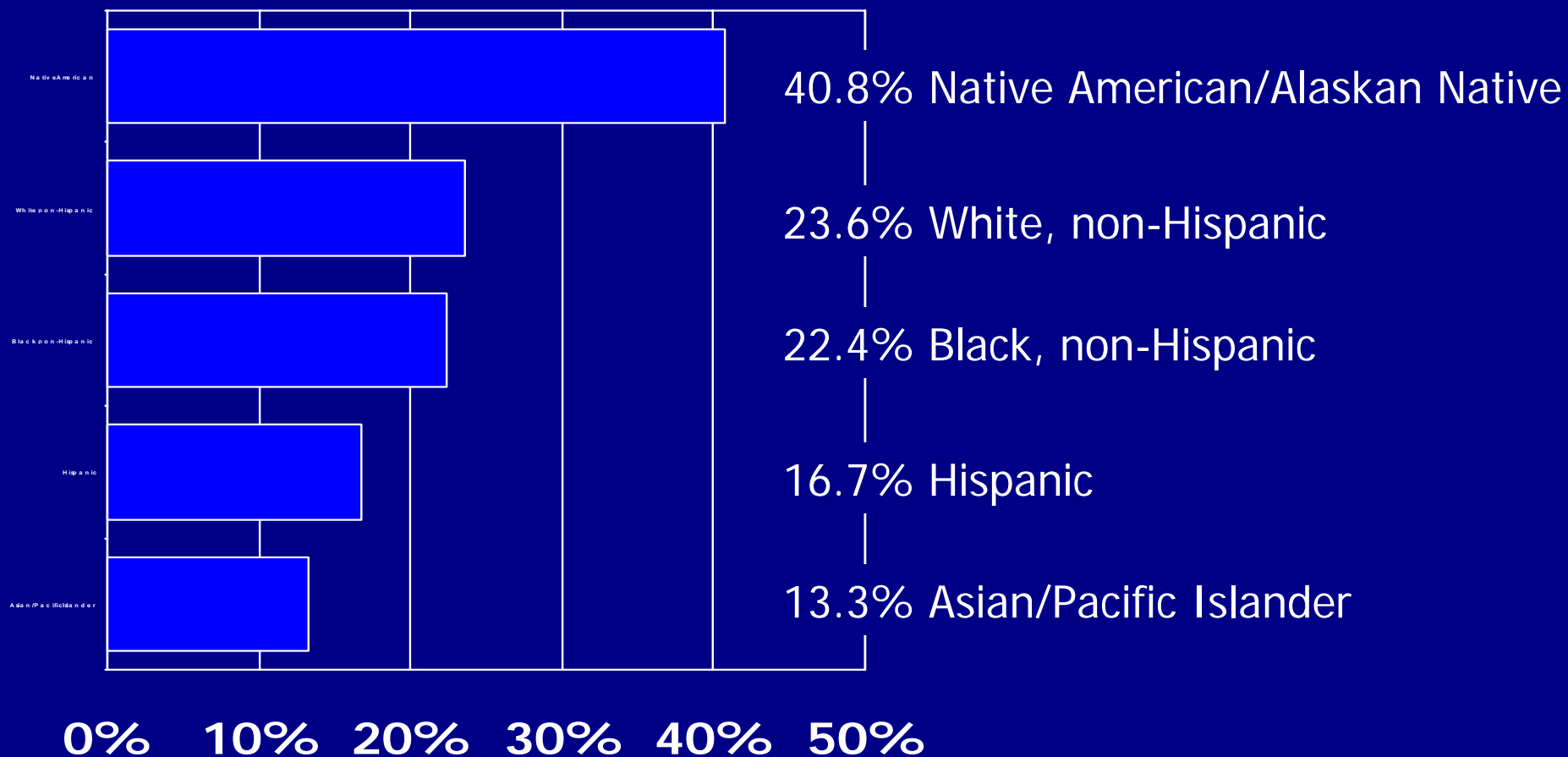
Trends in cigarette current smoking among persons aged 18 or older, by sex



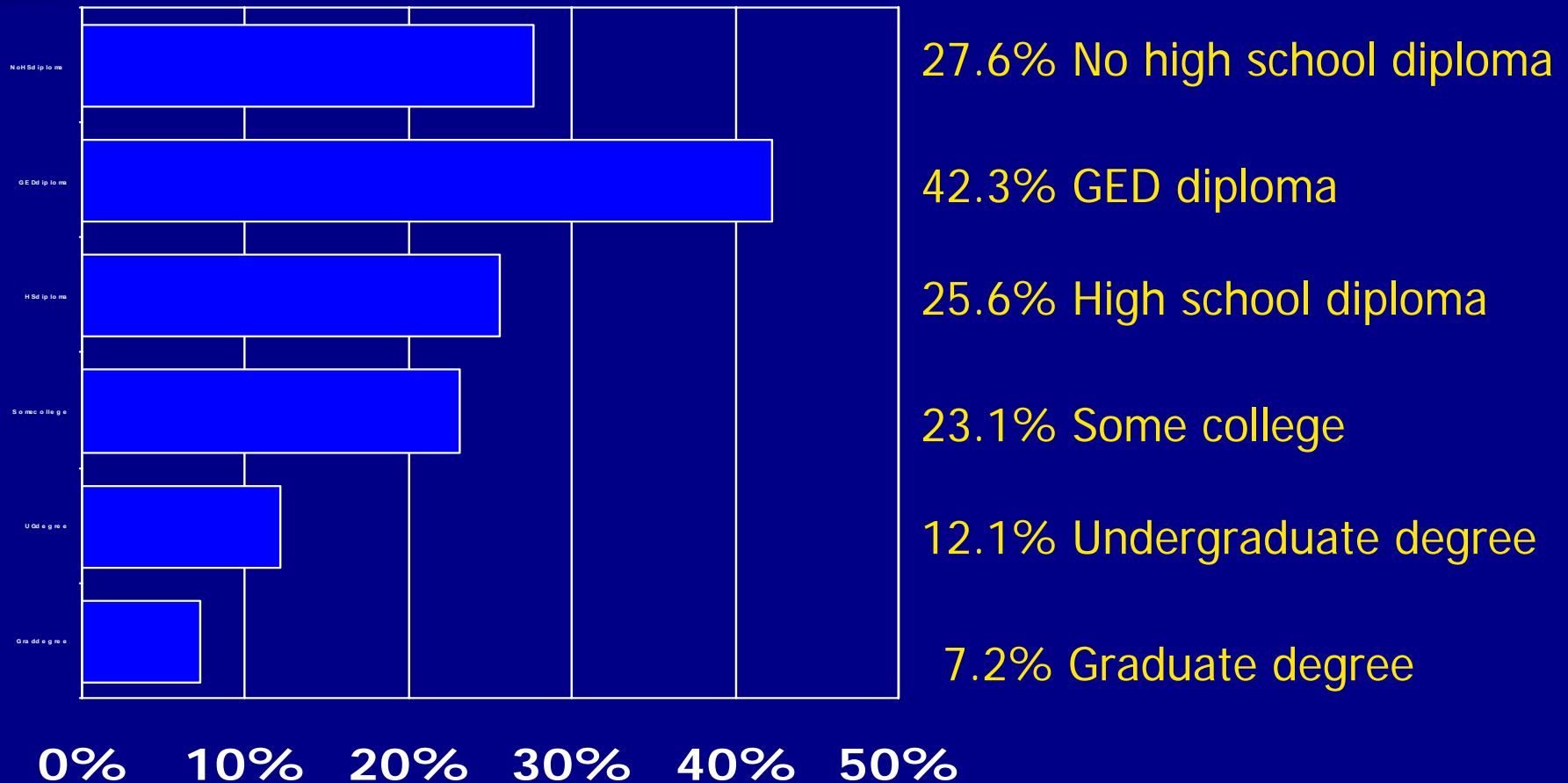
**70% want to quit**

Graph provided by the Centers for Disease Control and Prevention. 1955 Current Population Survey; 1965–2001 NHIS. Estimates since 1992 include some-day smoking.

# Prevalence of Adult Smoking, by Racial/Ethnic Groups in the U.S., 2002

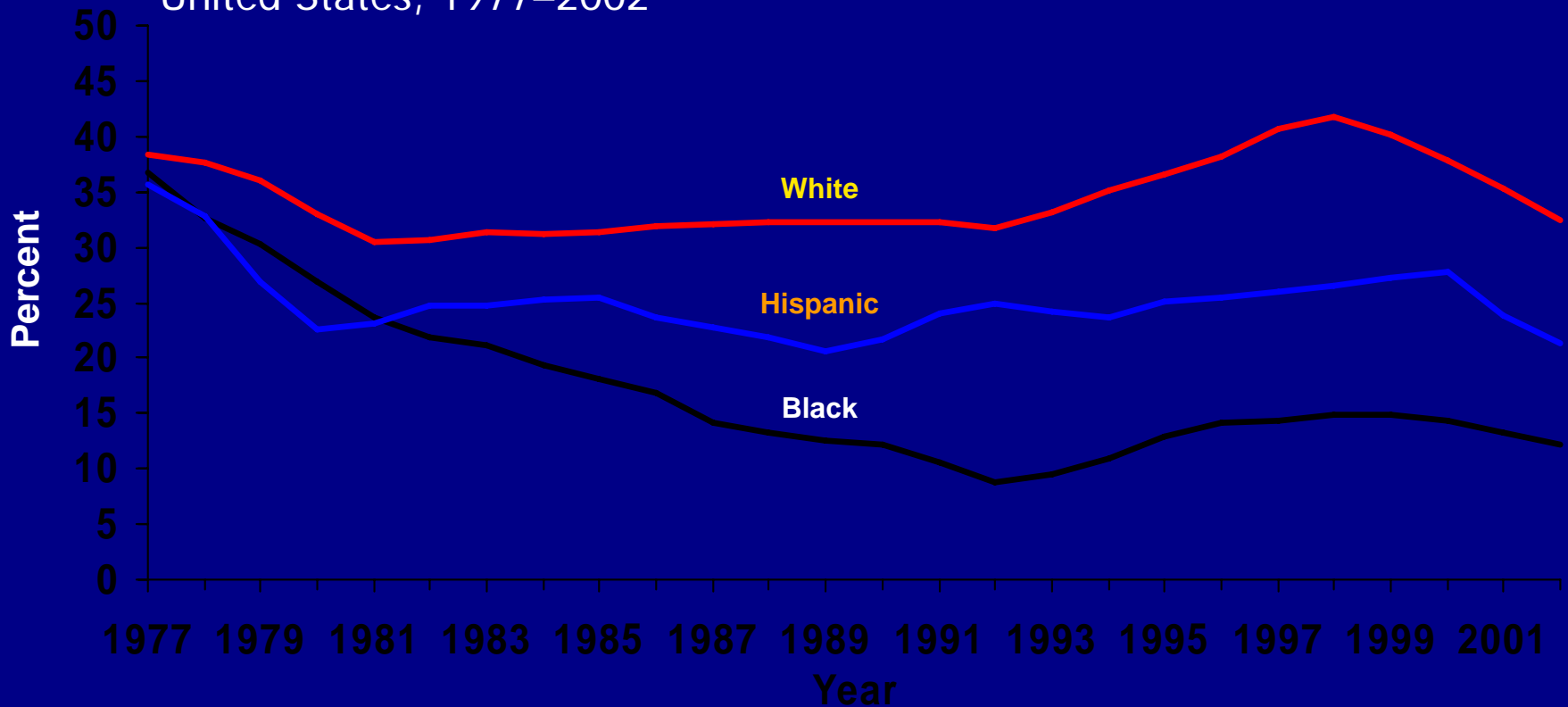


# Prevalence of Adult Smoking, by Education in the U.S., 2002



# Trends in Teen Smoking, by Ethnicity—U.S., 1977–2002

Trends in cigarette smoking among 12th graders, by racial/ethnic group—United States, 1977–2002



Institute for Social Research, University of Michigan, Monitoring the Future Project  
(2-year moving averages are used to stabilize estimates.)



# Ways to Help Smokers Quit

- Raise prices (taxes)
- Clean indoor air
- Create counter-marketing
- Provide cessation aids (counseling and pharmacotherapy)
  - Directly by clinician in individual or group session (office or hospital)
  - Through toll-free telephone quitlines

# Reasons for Not Helping Patients Quit

1. Too busy
2. Lack of expertise
3. No financial incentive
4. Most smokers can't/won't quit
5. Stigmatizing smokers
6. Respect for privacy
7. Negative message might scare away patients
8. I smoke myself

# Responses to Patient Who Smokes

- Unacceptable: "I don't have time."
- Acceptable
  - Refer to a quitline
  - Establish systems in your office and hospital
  - Become a cessation expert

# Nicotine Pharmacodynamics

## Central nervous system

- Pleasure
- Arousal, enhanced vigilance
- Improved task performance
- Anxiety relief

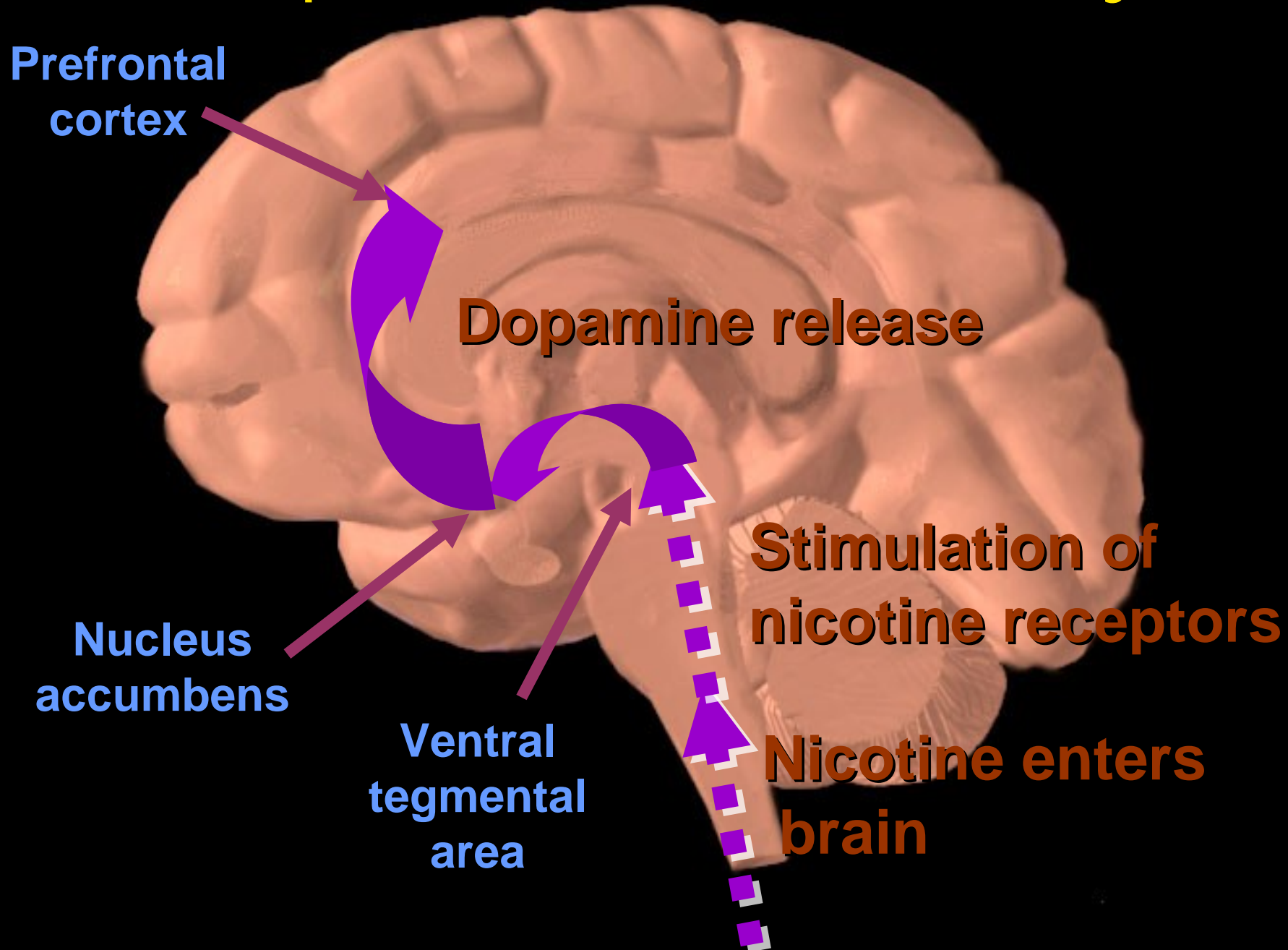
## Other

- Appetite suppression
- Increased metabolic rate
- Skeletal muscle relaxation

## Cardiovascular system

- ↑ Heart rate
- ↑ Cardiac output
- ↑ Blood pressure
- Coronary vasoconstriction
- Cutaneous vasoconstriction

# Dopamine Reward Pathway



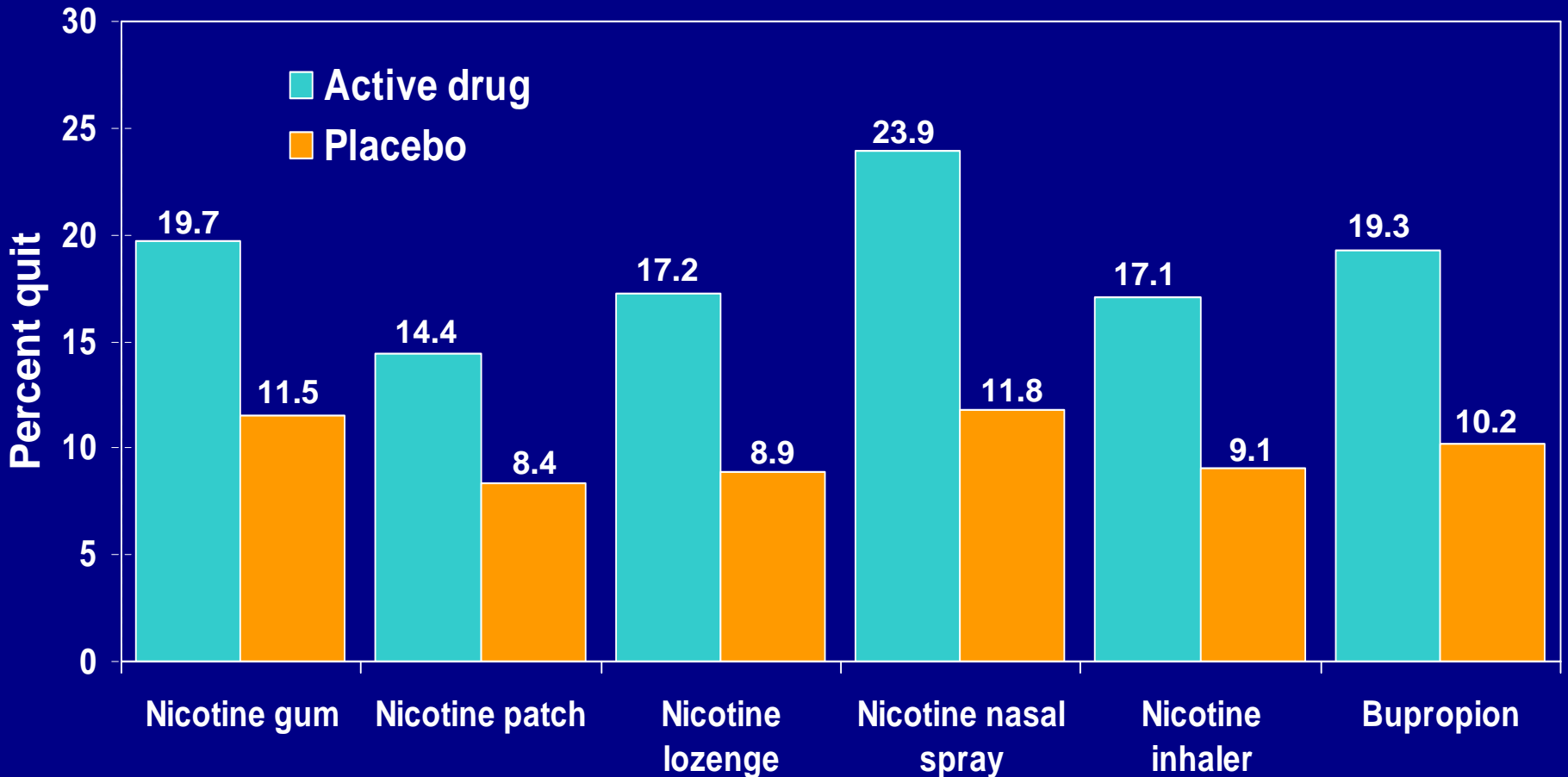
# Nicotine Pharmacodynamics: Withdrawal Effects

- Anger/irritability
- Anxiety
- Cravings
- Difficulty concentrating
- Hunger/weight gain
- Impatience
- Restlessness
- Drowsiness
- Fatigue
- Impaired task performance
- Nervousness
- Sleep disturbances

# 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 more frequently
  - Smoking more intensely
  - Obstructing vents on low-nicotine brand cigarettes

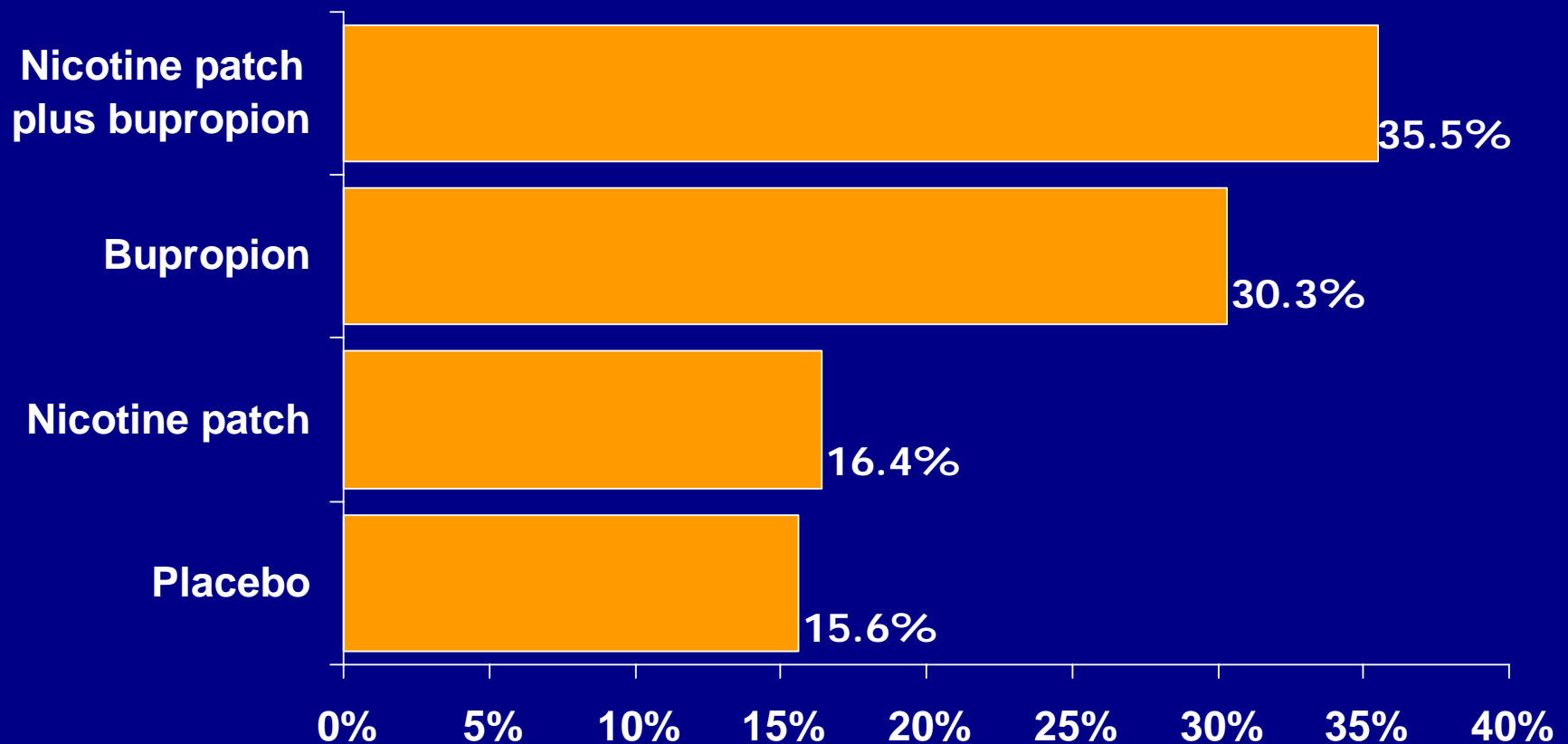
# Long-Term ( $\geq 6$ Months) Quit Rates for Available Cessation Medications



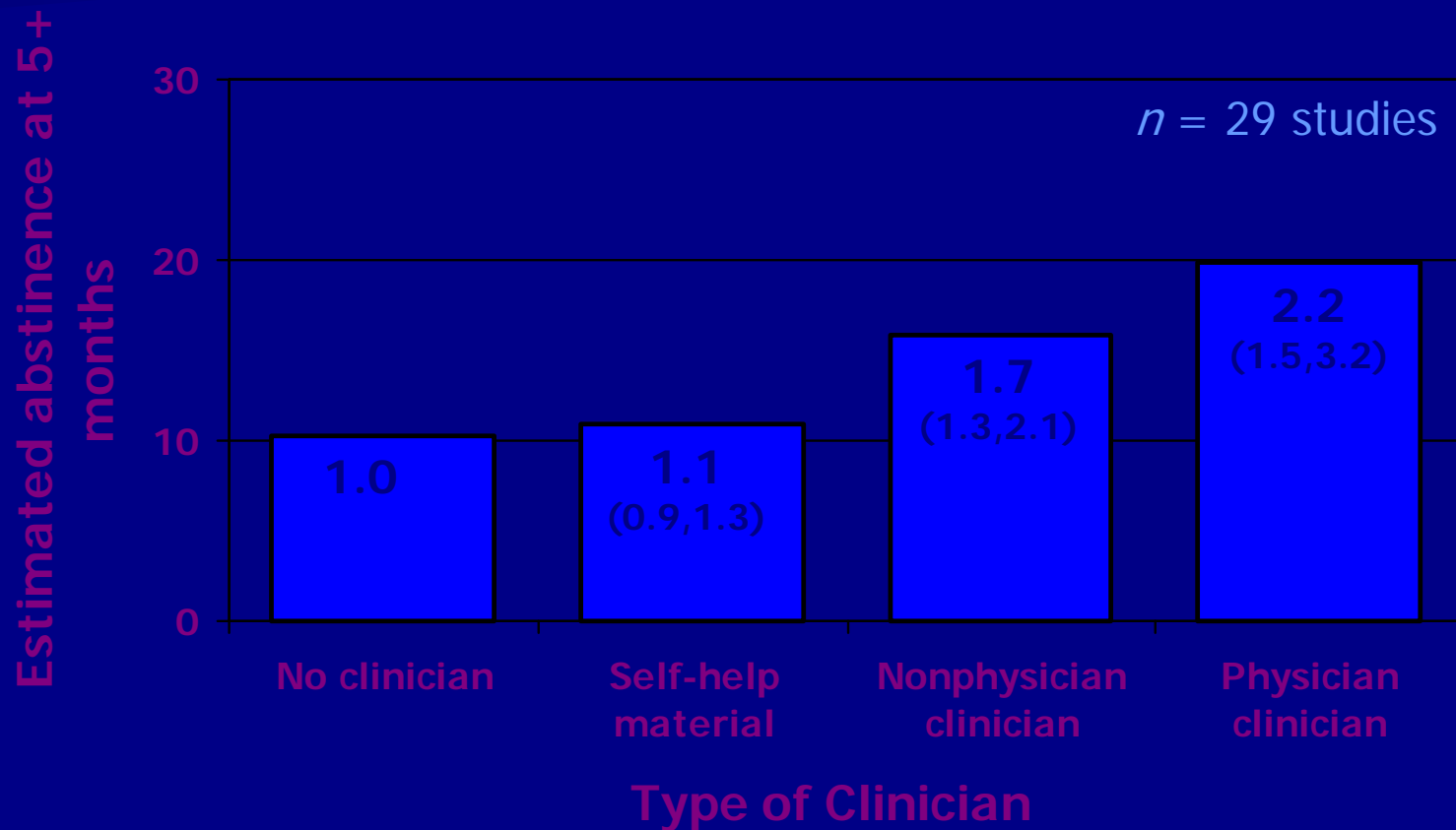
Data adapted from Silagy et al. Cochrane Database Syst Rev, 2002  
and Hughes et al., Cochrane Database Syst Rev, 2000

# Combination Therapy: Patch Plus Bupropion SR

Percentage of patients quit at 12 months after cessation

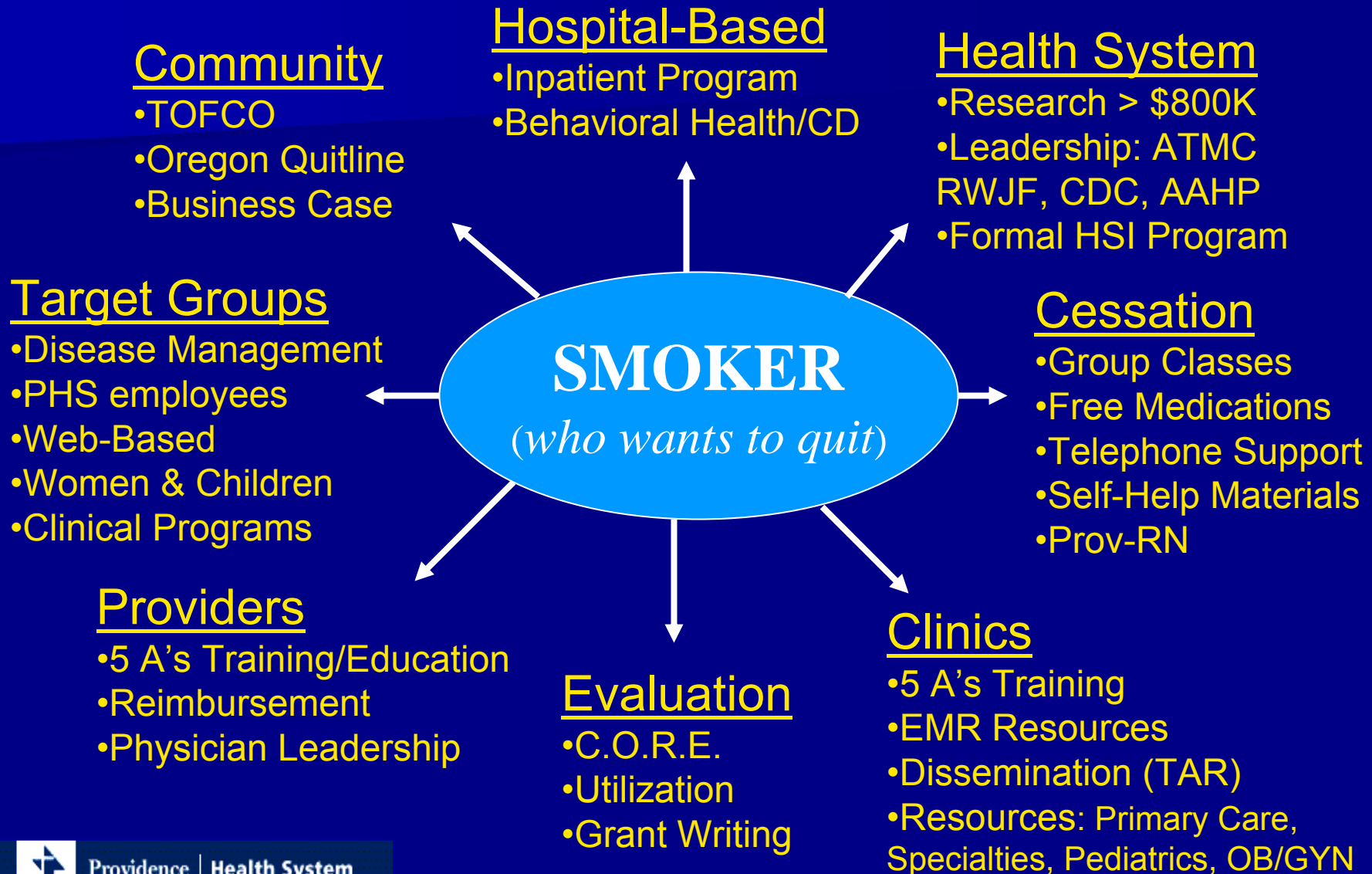


# Effects of Clinician Interventions

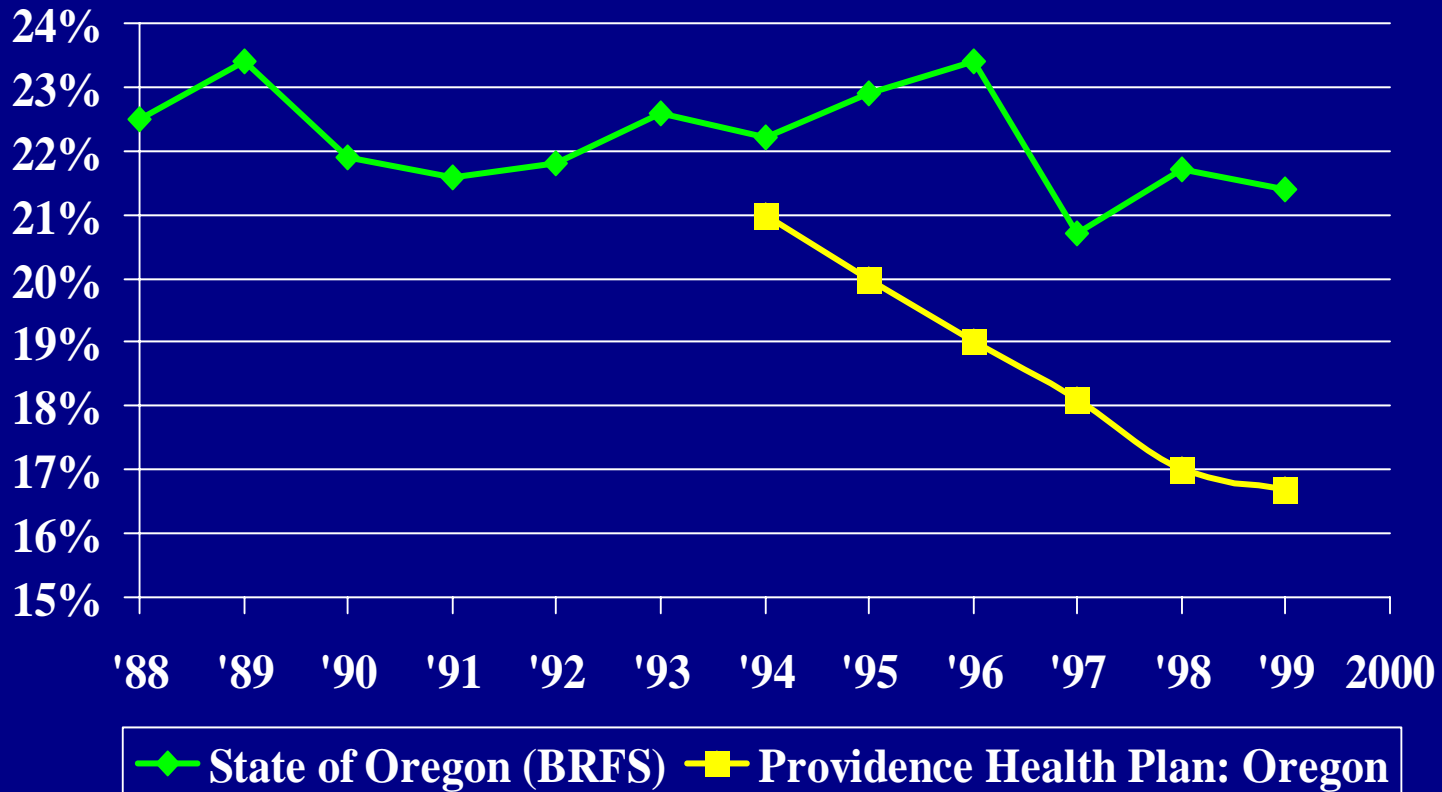


Fiore et al. *Treating Tobacco Use and Dependence. Clinical Practice Guideline.* Rockville, MD: USDHHS, PHS, 2000.

# Treating Tobacco Dependence : 2003



# Smoking Prevalence in PHP vs. Oregon



# Gold Card

*You can*

## TAKE CHARGE

If you want to take charge, call us.  
We can talk about how to quit smoking  
or chewing tobacco.

**1-800-NO-BUTTS**  
(1-800-662-8887)

**1-800-844-CHEW**  
(1-800-844-2439)

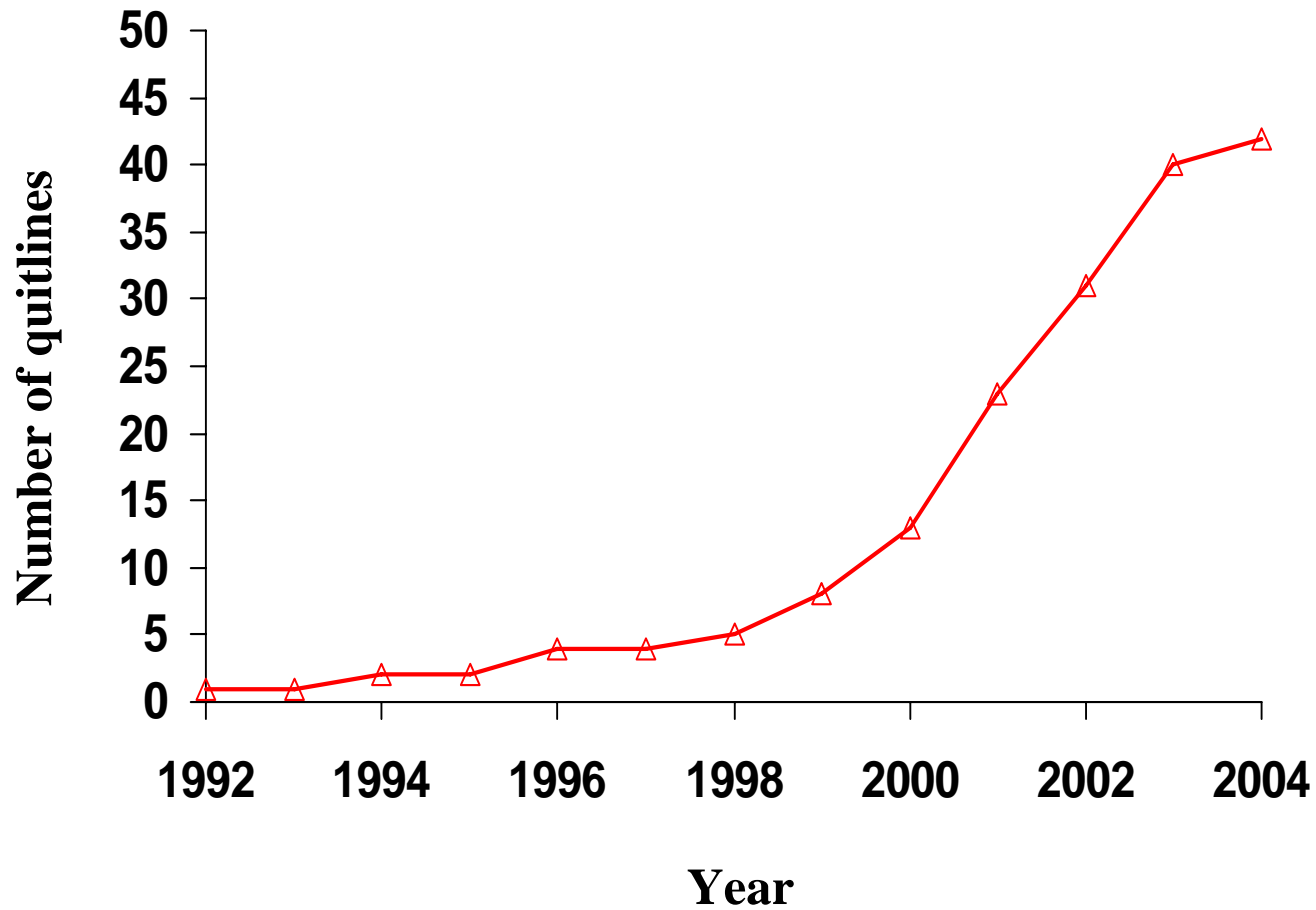


California  
Smokers'  
Helpline

# Quitline Numbers

- 1-800 NO BUTTS (California number)
- 1-800 QUIT NOW (National number)

**Figure 1. Adoption of State Quitlines in the U.S.**



# Efficacy and Average Sample Size of Tobacco Cessation Studies Reviewed by the Cochrane Library<sup>†</sup>

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Type of Intervention	Odds Ratio (95% CI*)	Average Sample Size per Trial
Nicotine Replacement Therapy (NRT, n=98*)	1.74 (1.64, 1.86)	385
Telephone Counseling (TC, n=13*)	1.56 (1.38, 1.77)	1100

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\*n indicates number of studies; CI. Confidence interval.

<sup>†</sup>Based on Silagy et al. (2004) and Stead et al. (2204). *The Cochrane Library*.

# Knowledge of Tobacco Cessation Programs Among California Smokers<sup>†</sup>

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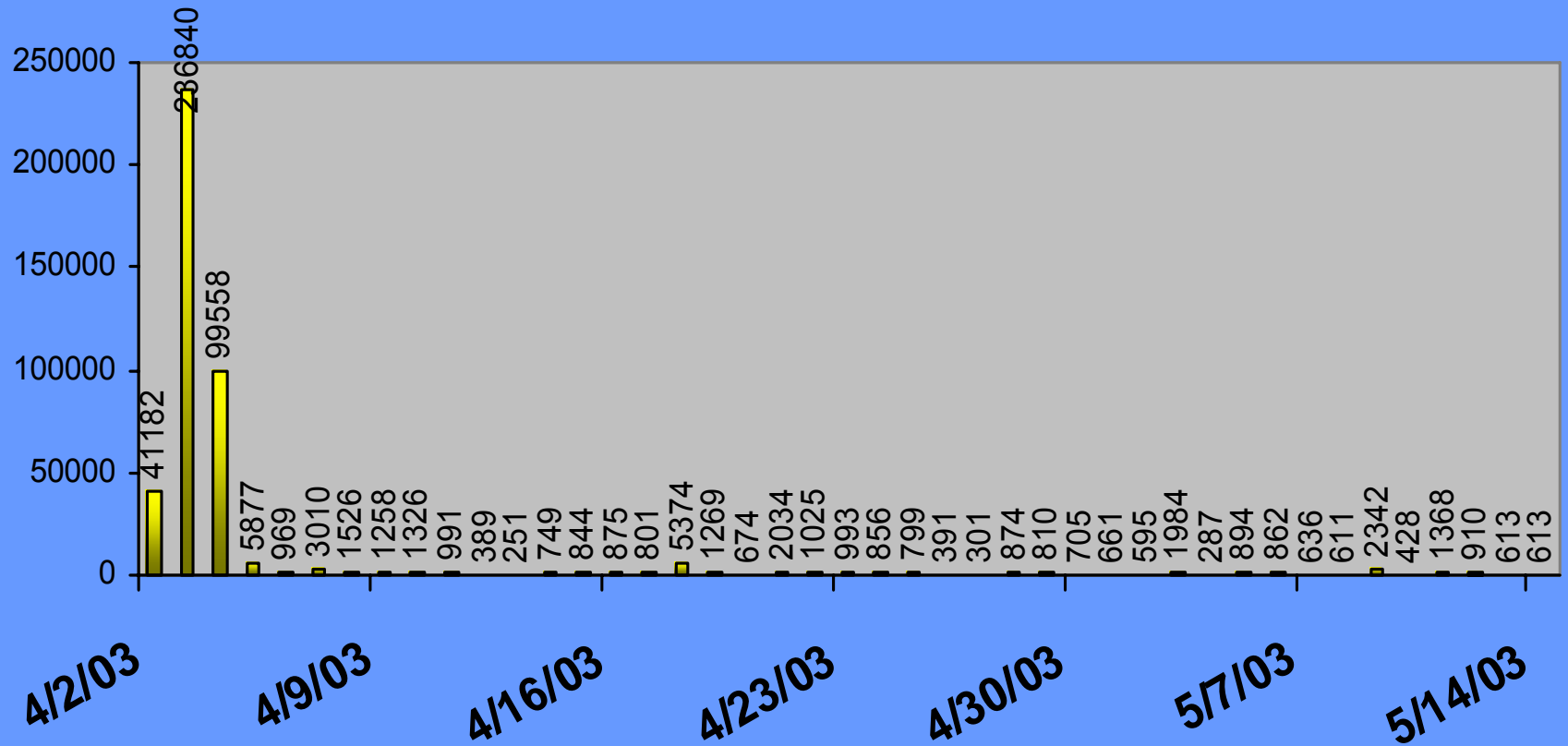
	Unaided Recall	Aided Recall
	% ( $\pm$ 95 CI*)	% ( $\pm$ 95 CI*)
Telephone Quitline	4.5 (1.1)	38.7 (2.6)
NRT	59.5 (2.5)	--
Hypnosis	9.8 (1.5)	--
SmokEnders	4.5 (1.1)	--
Others	46.3 (2.9)	--

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■ <sup>†</sup>Data from the California Tobacco Survey, 1999. For the unaided recall question, survey respondents were asked, "Can you name up to 3 programs that are helpful to people who are trying to quit smoking?" The aided recall question was asked only in reference to the quitline: "Have you ever heard of the 1-800-NO-BUTTS (or, in Spanish, 1-800-45-NO-FUME) phone number?"

■ \*CI indicates confidence interval.

# Call volume to the Quitline in Response to New York City Free Patch Give Away Program (>425,000 Calls in First 3 Days!!!)



# Barriers to Successful Cessation

- Provider inattention/pessimism
- Co-dependency and mental illness
- No coverage for cessation drugs
- Improper use of the drugs
- Ignorance of quitlines

# Strategies for Increasing Quit Rates

- Reframe expectations of success
- Focus on mental health/substance abuse population
- Market quitlines better
- Develop newer drugs
- Create better systems
- Provide clinical champions

# Power of Intervention

- $\frac{1}{3}$  to  $\frac{1}{2}$  of the 46 million smokers will die from the habit. Of the 32 million who want to quit, 10 to 16 million will die from smoking.
- Increasing the 2.5% cessation rate to 10% would save 2.4 million additional lives.
- If cessation rates rose to 15%, 4 million additional lives would be saved.
- No other health intervention could make such a difference!

# Recent Developments in Tobacco Use

- Gradual decline
- Great variation among states
- Age 18-24 rate increasing
- Smoking rates greater in
  - the poor
  - mentally ill
  - alcohol and drug abusers

# What Works in Tobacco Control?

- Combinations better than single efforts
- Price increases
- Clean indoor air laws
- Smoking cessation programs
- Counter-marketing

# Efforts of Questionable Efficacy (to Date)

- Restrictions on sales to minors
- Advertising and promotion restrictions
- Regulation and labeling of products

# Canada Label



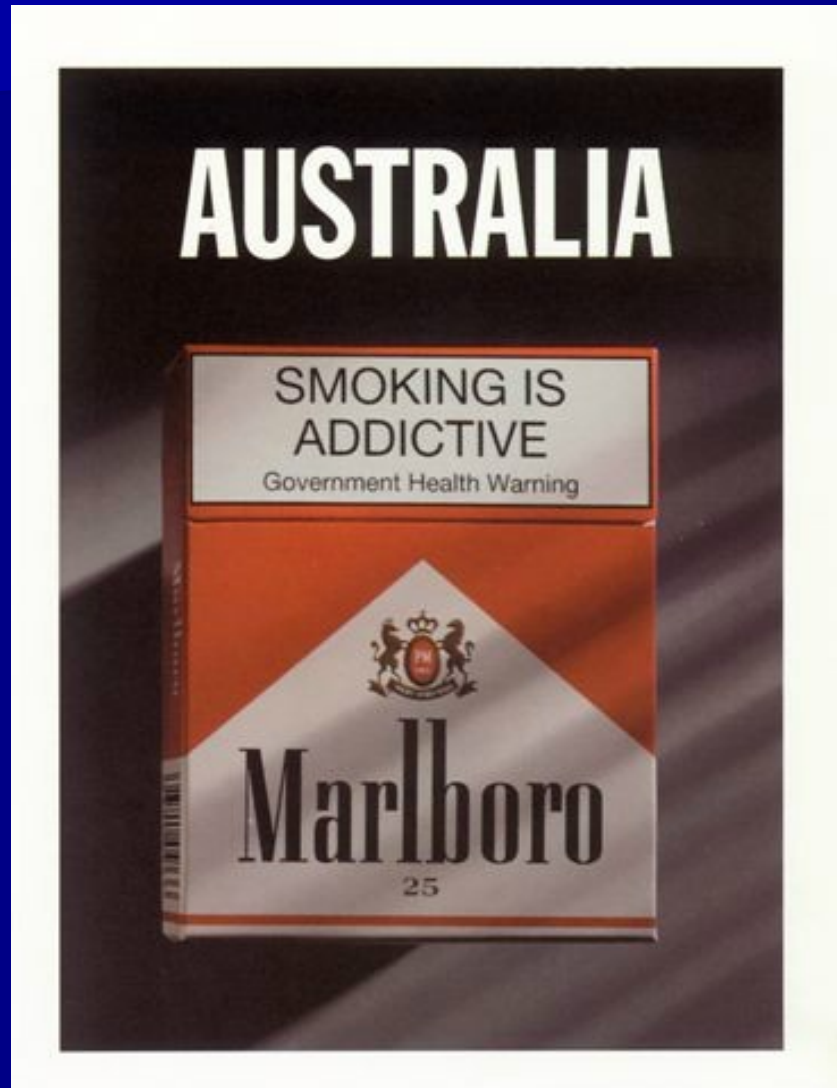
**WARNING**

**CIGARETTES  
CAUSE MOUTH  
DISEASES**

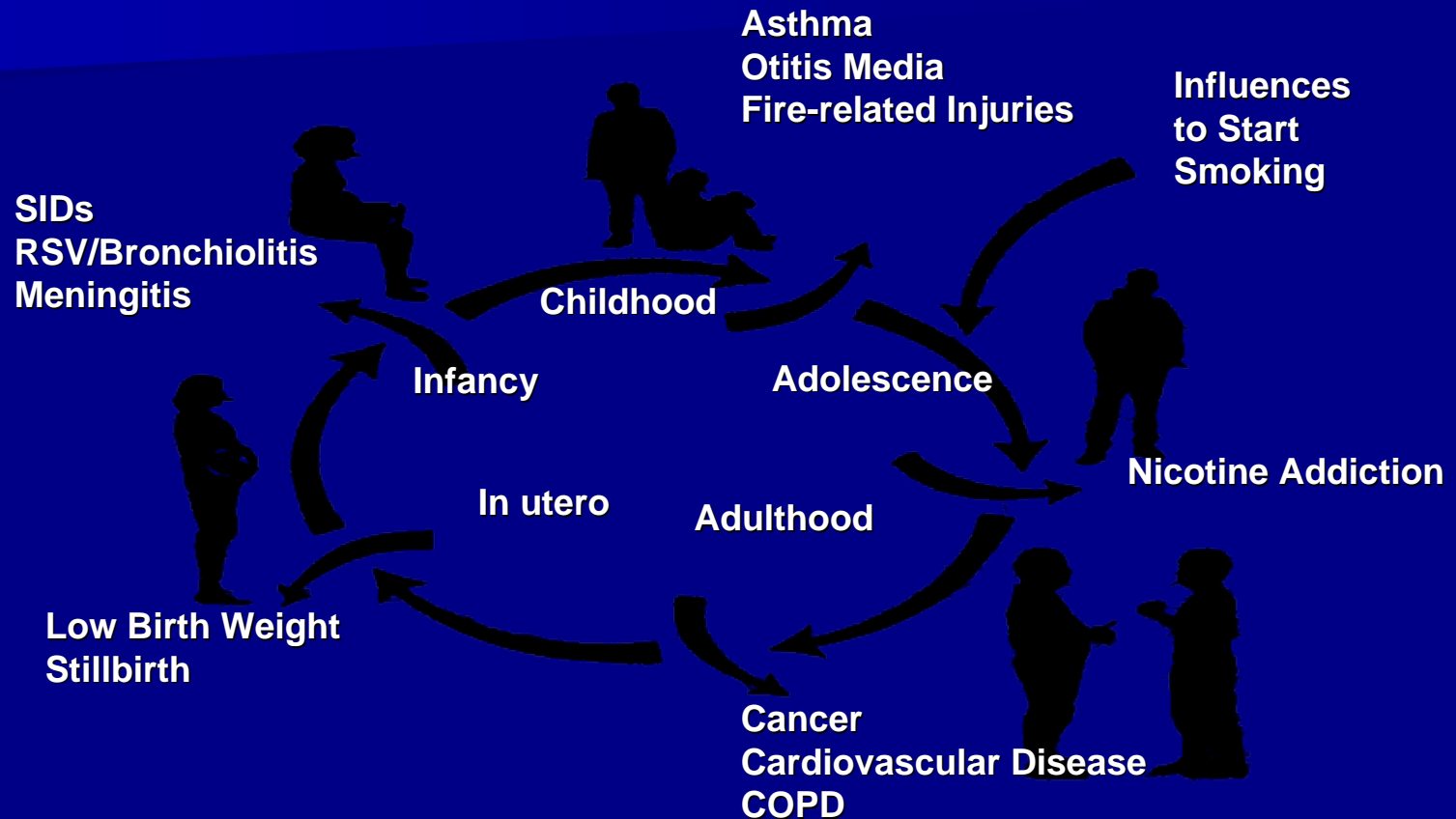
Cigarette smoke causes oral cancer,  
gum diseases and tooth loss.

Health Canada

# Australia Label



# The Life Cycle of the Effects of Smoking on Health



# Scope

- More than 40% (~15 million) of US children live with a smoker
- Younger children spend most of their time with a parent; if that parent smokes, ETS exposure can be significant
- Exposures at home, child care, car

# Morbidity and Mortality

- ~6200 children die each year in the U.S. as a result of ETS
- ~5.4 million childhood illnesses are attributed to ETS
- Annual costs associated with ETS: ~\$4.6 billion

# Harms Associated with ETS Exposure

- Respiratory

- ↑ upper and lower respiratory illnesses, including asthma, otitis media

- SIDS

- Remaining modifiable risk factor following back to sleep

- Neurocognitive

- ↑ incidence learning disabilities, ADD/ADHD, behavioral difficulties

- Others

# Short Term Effects

- Decreased pulmonary function
- Upper and lower respiratory tract infections
- Asthma
- Otitis media
- Invasive meningococcal disease
- Household fires

# Long Term Effects

- Increased risk of cancers
  - adult leukemia and lymphoma associated with exposure to maternal smoking before age 10
- Increased risk of lipid disorders?

# Asthma

- ETS accounts for 8-13% of asthma cases in children <15 years
- ETS exposure increases frequency of episodes and severity of symptoms
- 200,000-1 million asthmatic children are affected by ETS

# Smoke-Free Homes Are Protective

- Children and adolescents who live in smoke-free homes are 74% less likely to be smokers
- Adolescent “ever” smokers are 1.8 times more likely to be former smokers if they live in smoke-free homes

# Barriers - Real and Imagined

- The patient is the child, not the parent
- Could alienate the parent
- Time
- Reimbursement
- Don't know how

# Pediatric Counseling of Parents Is Acceptable

- 56% felt that pediatricians should give quit-smoking advice
- 52% of smoking parents would welcome advice
- 91% of smoking parents intended to quit smoking

# What Can Pediatricians and Other Child Health Advocates Do?

- Ask all parents about smoking
- Educate parents
- Offer treatment or referral (quitline or local system)
- Advocate for smoke free areas
- Advocate for tobacco control