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Smoke and Mirrors:

Examining Tobacco Use, Consequences and Policies in Connecticut

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Research Paper Written by:
Judith Cooney PhD, Jeff Cohen PhD, Patricia Checko PhD,
Christoffer Grant MA and Katharine Kranz Lewis PhD MPH MSN RN

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UNIVERSAL HEALTH CARE FOUNDATION of CONNECTICUT

UNIVERSITY OF HARTFORD

"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.

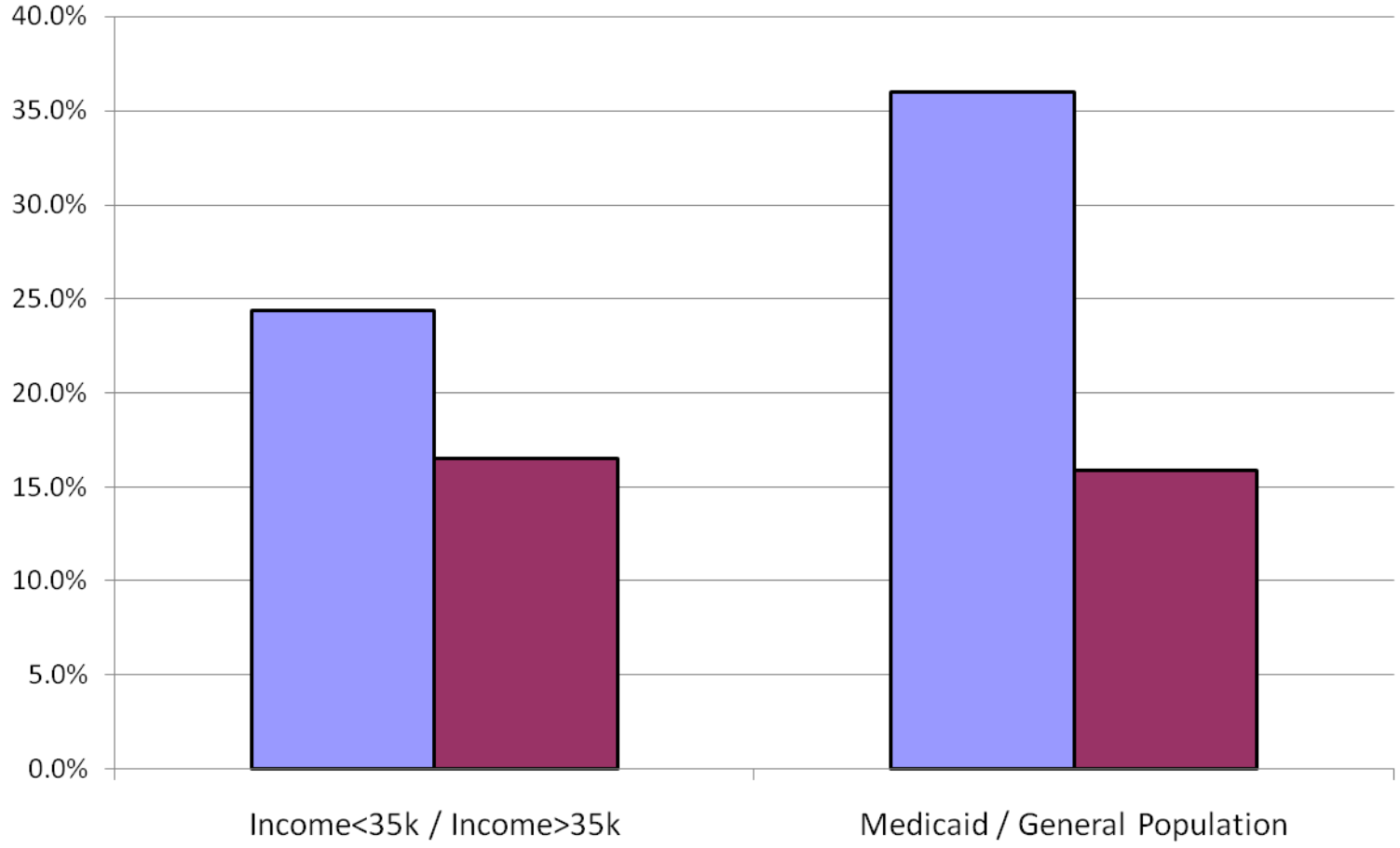
U.S. Surgeon General, 1981-1989

An Overview of Cigarette Smoking

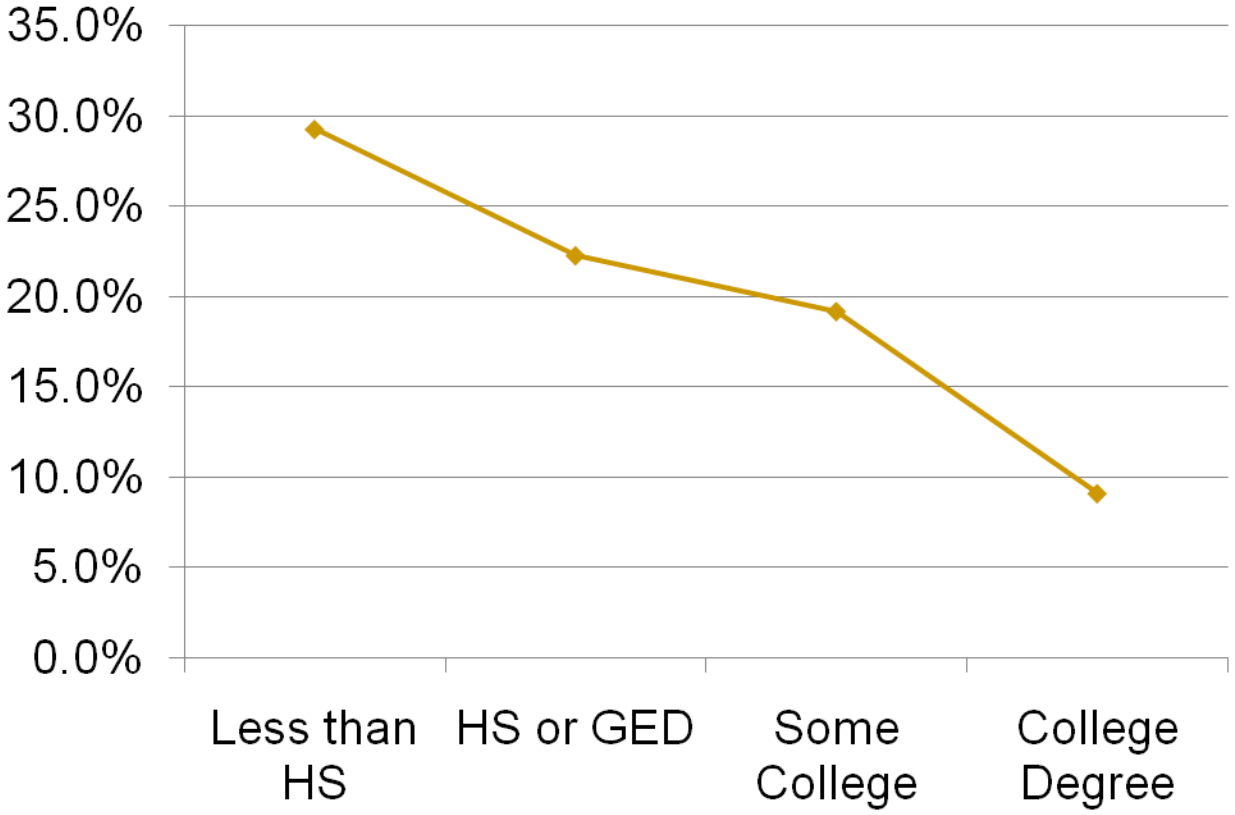
- United States
  - 42.4% in 1965
  - 20.5% in 2009
- Connecticut
  - 15.9% of adults in 2008
    - More males than females
    - Decreases with age

Sources: CDC. 2008. *Cigarette Smoking Among Adults—United States, 2007*. Morbidity and Mortality Weekly Report, 57(45):1221–6.; Connecticut 2008 data received from the Connecticut Department of Public Health Epidemiologist (Dawn Sorosiak, personal communication, September 22, 2009). Centers for Disease Control and Prevention (CDC). 2009. Centers for Disease Control and Prevention (CDC). 2009. *Cigarette smoking among adults and trends in smoking cessation—United States, 2008*. Morbidity and Mortality Weekly Report, 58(44):1227–32.

Percent of Adult Smokers by Income and Medicaid Status in Connecticut



Percent of Adult Smokers by Education in Connecticut



Source: Connecticut Department of Public Health. 2009. *2007 Connecticut School Health Survey.* Available at http://www.ct.gov/dph/lib/dph/hisr/pdf/cshs_2007_report.pdf. Accessed November 19, 2009.

Percent of Adult Smokers by Race/Ethnicity: US and Connecticut, 2008

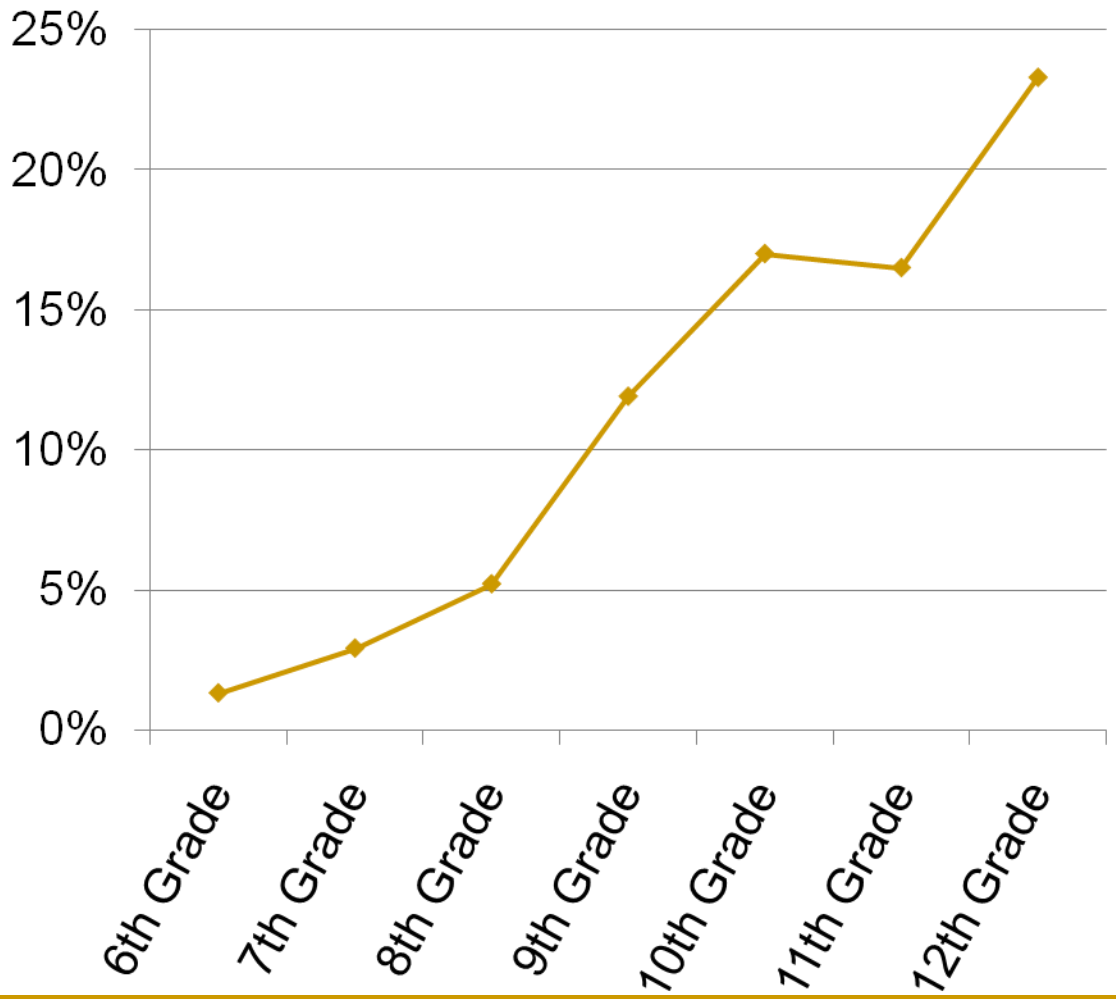
Race/Ethnicity	National	Connecticut
White, non-Hispanic	22.0	15.3
Black, non-Hispanic	21.3	14.3
Hispanic	15.8	23.2*
Asian	9.9	3.2

*The The Hispanic population in the state of CT is younger than the national average. As smoking rates are greater in younger populations, this figure should be interpreted with some caution (Dawn Sorosiak, personal communication, November, 6, 2009).

Sources: CDC. 2008. *Cigarette Smoking Among Adults—United States, 2007*. Morbidity and Mortality Weekly Report, 57(45):1221–6.; Connecticut 2008 data received from the Connecticut Department of Public Health Epidemiologist (Dawn Sorosiak, personal communication, September 22, 2009).

Prevalence of Smoking in Adolescents: Connecticut

- Smoking behavior starts at a young age
- 40% of current CT smokers initiated use before age 15



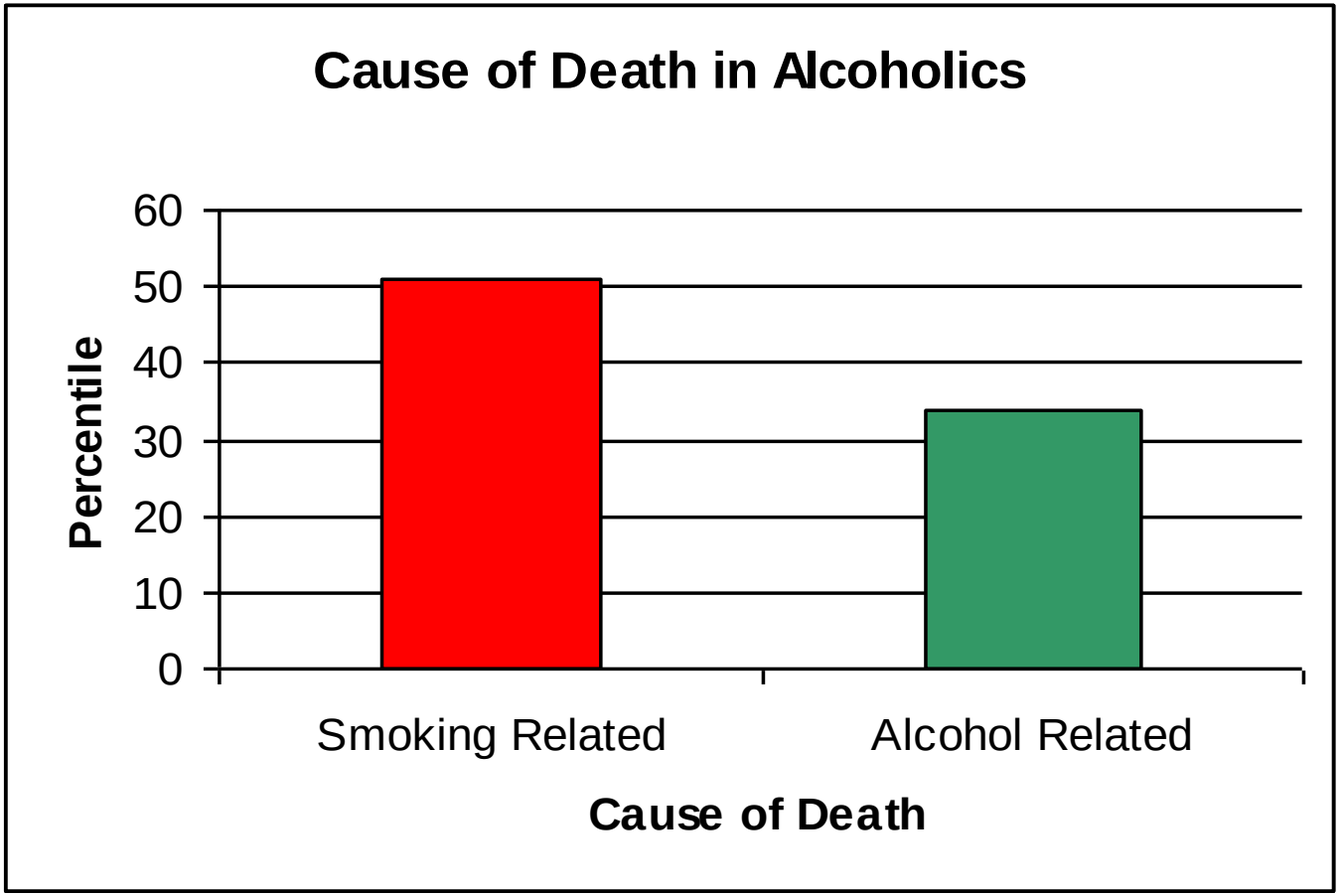
Source: Connecticut Department of Public Health. 2009. *2007 Connecticut School Health Survey.* Available at http://www.ct.gov/dph/lib/dph/hisr/pdf/cshs_2007_report.pdf. Accessed November 19, 2009.

Smoking and Mental Illness: Population Studies

	No History Psychiatric Diagnosis	+History Psychiatric Diagnosis	+Current Psychiatric Diagnosis
Current Smoking Rate	22.5%	34.8%	41.0%
Lifetime Smoking Rate	39.1%	55.3%	59.0%

Lasser, K., Boyd, J., Woolhandler, S., Himmelstein, D., McCormick, D., & Bor, D. 2000. *Smoking and Mental Illness: a Population-based Prevalence Study.* Journal of the American Medical Association,284:2606-2610.

Alcoholism and Smoking: Health Impact



Source: Hurt RD, Offord KP, Croghan IT, Gomez-Dahl L, Kottke TE, Morse RM, Melton LJ. Mortality following inpatient addictions treatment; Role of tobacco use in a community-based cohort. *J Am Med Assoc. 1996;275*:1097–1103.

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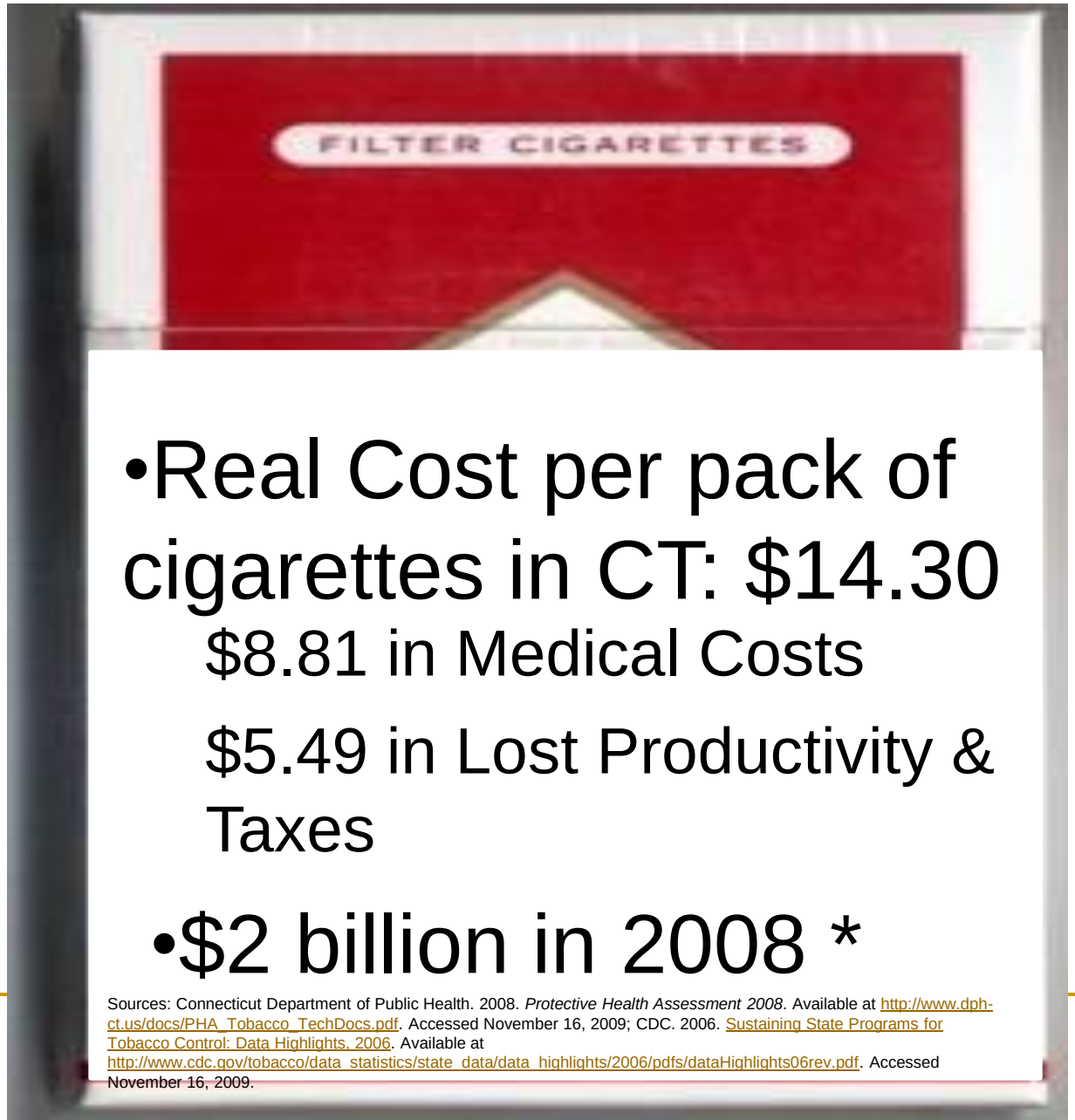
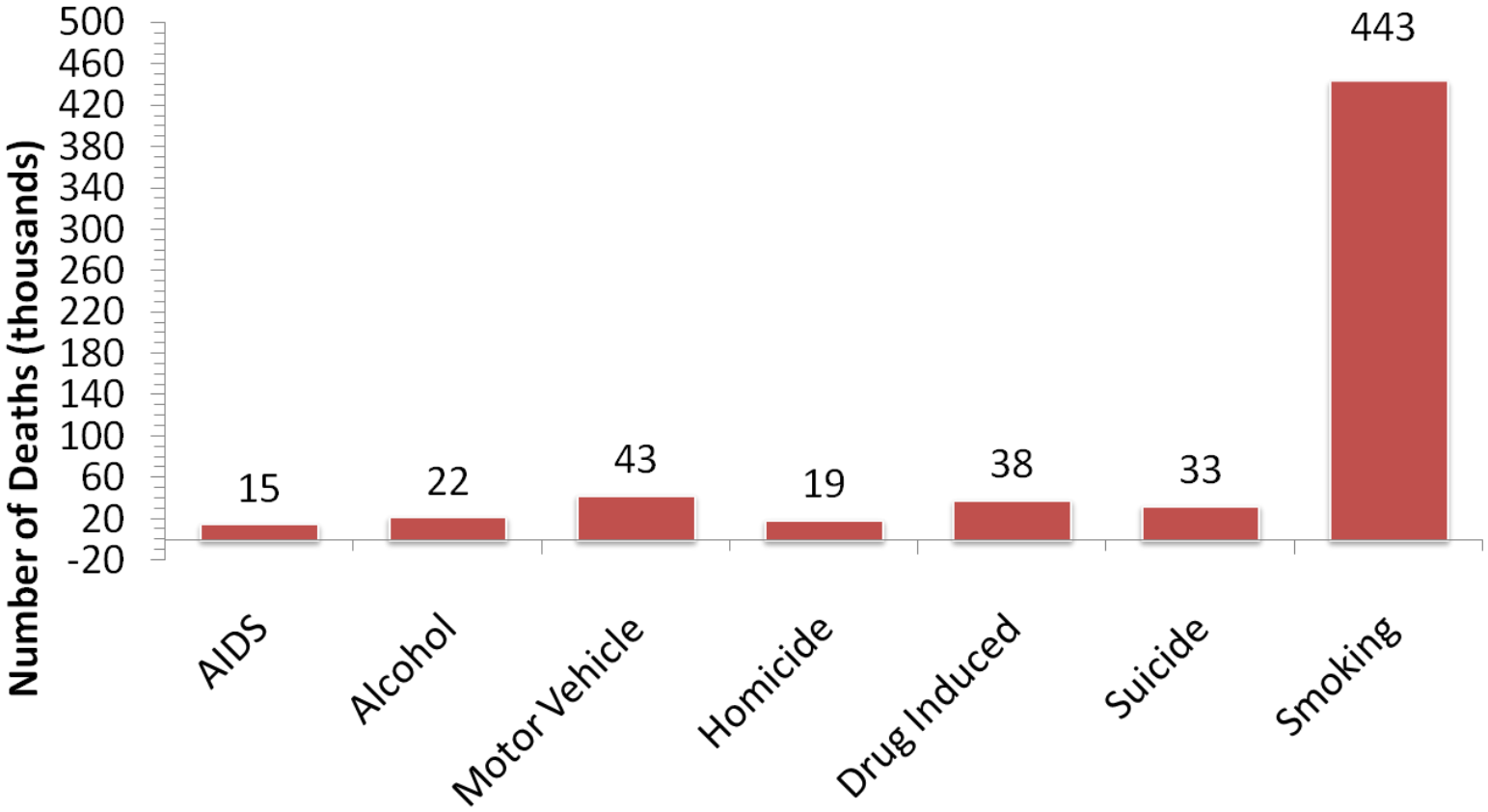


- Real Cost per pack of cigarettes in CT: $14.30
  - $8.81 in Medical Costs
  - $5.49 in Lost Productivity & Taxes
- $2 billion in 2008 *

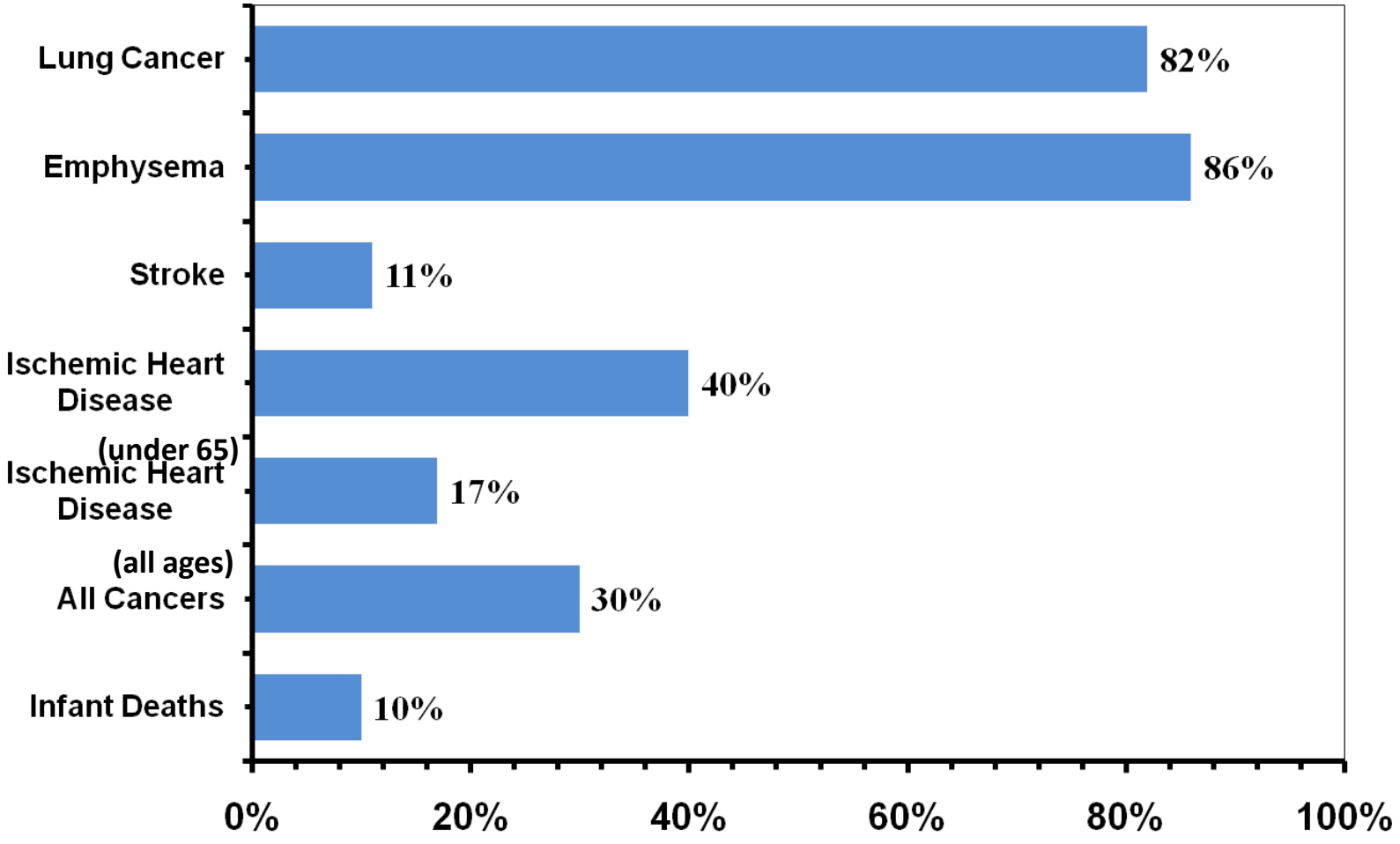
Sources: Connecticut Department of Public Health. 2008. *Protective Health Assessment 2008*. Available at http://www.dph-ct.us/docs/PHA_Tobacco_TechDocs.pdf. Accessed November 16, 2009; CDC. 2006. Sustaining State Programs for Tobacco Control: Data Highlights, 2006. Available at http://www.cdc.gov/tobacco/data_statistics/state_data/data_highlights/2006/pdfs/dataHighlights06rev.pdf. Accessed November 16, 2009.

Annual Deaths from Smoking Compared to Other Causes of Death: 2006



Sources: CDC. *Deaths: Final Data for 2006*. National Vital Statistics Report, 2009. Vol. 57(14).; CDC. *HIV/AIDS Surveillance Report, 2007. Vol. 19. Atlanta: US Department of Health and Human Services, CDC; 2009.;* Centers for Disease Control and Prevention. *Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses—United States, 2000–2004.* Morbidity and Mortality Weekly Report. 2008;57(45):1226–1228

Smoking-Related Deaths by Disease: United States



Source: 2004 Surgeon General's Report. Data from USA; 2008 MMWR 57(45) 1226-1228

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Medical Consequences Related to Active Smoking

Cancers
- -Lung
- -Oral Cavity
- -Laryngeal
- -Esophageal
- -Stomach
- -Pancreatic
- -Kidney
- -Bladder
- -Cervical
- -Leukemia

Cardiovascular
- -Ischemic Heart Disease
- -Stroke
- -Peripheral Vascular Disease
- -Abdominal Aortic Aneurysm

Respiratory
- -COPD
- -Community Acquired Pneumonia
- -Poor Asthma Control

Reproductive
- -Erectile Dysfunction
- -Reduced Fertility
- -Pregnancy Complications
- -Low Birth weight
- -SIDS

Other
- -Adverse Surgical Outcomes/ Wound Healing
- -Hip Fractures
- -Low Bone Density
- -Cataract
- -Peptic Ulcer Disease
- -Metabolic Syndrome

Sources: CDC. 2009. Centers for Disease Control and Prevention. *Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses—United States, 2000–2004.* Morbidity and Mortality Weekly Report. 2008;57(45):1226–1228; CDC. 2004. The health consequences of smoking: a report of the Surgeon General. Available at http://www.cdc.gov/tobacco/data_statistics/sgr/2004/complete_report/index.htm. Accessed November 16, 2009.

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Risks of Second Hand Smoke

Disease States	Estimated Annual Toll
Lung Cancer	3,423-8,866 deaths
Cardiac-related illnesses	22,700-69,600 deaths
Sudden infant death syndrome	430 deaths
Low birth weight infant or pre-term births	24,300 – 71,900 cases
Childhood asthma (new and exacerbations)	202,300 episodes
Childhood lower respiratory illnesses	150,000 – 300,000 cases
Childhood middle ear infections	789,700 cases

- ↑ relative risk of COPD by 55%
- Doubles risk of stroke, nearing that of active smoking
- Most Indoor ventilation systems ineffective at ↓ hazards and risks of second hand smoke

CDC Surgeon General's Report. The Health Consequences of Involuntary Exposure to Tobacco Smoke: Executive Summary, 2006

What is in Cigarette Smoke?:

4,000 chemicals - >200 toxins, >60 carcinogens

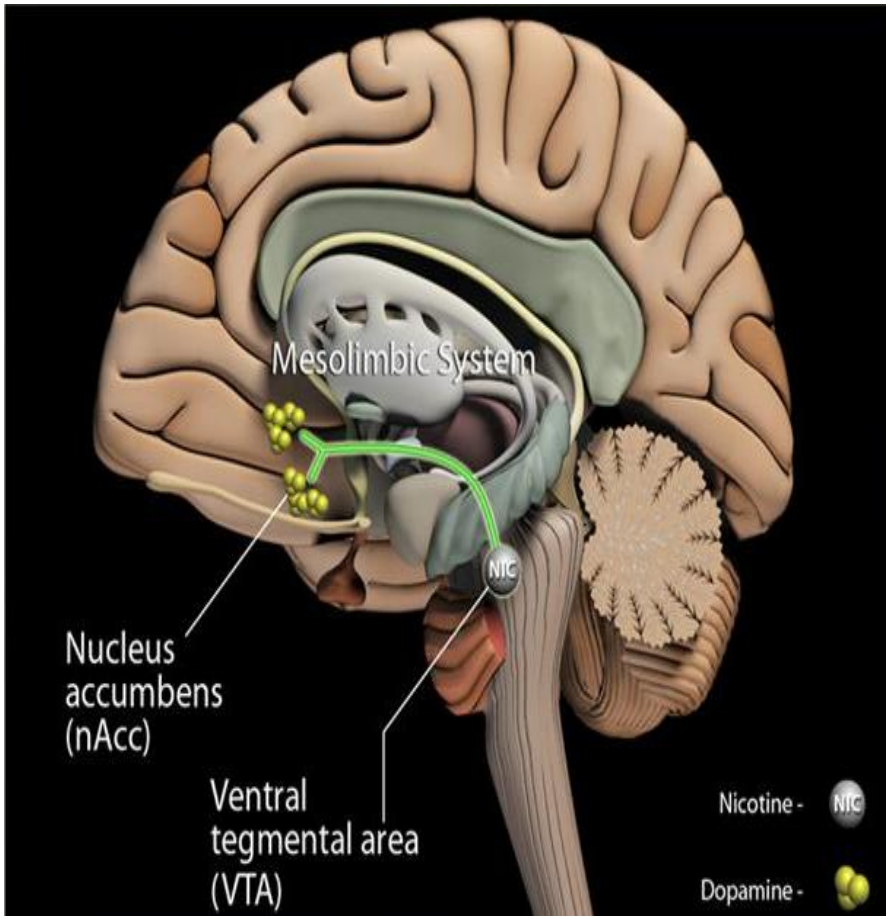
Acetone (B)	Ethanol	Napthylamine (C)
Aluminum	Formaldehyde (C,B)	Nickel (C, B)
Ammonia	Hydrazine (C)	Nicotine
Anabasine	Hydrogen cyanide	Nitrobenzene
Arsenic (C, B)	Lead (C, B)	Nitrosamines (C)
Benzene	Magnesium (B)	Polonium-210 (C)
Butane	Mercury (B)	Titanium (B)
Carbon Monoxide (B)	Methane	Toluene (B)
DDT (B)	Methyl Isocyanate	Urethane (C)
Dimenthylhydrazine (C)	N-Nitrosanabasine (C)	Vinyl chloride (C, B)

(C) = Carcinogen, (B) = Birth Defects

- Low tar cigarettes not associated with decreased risks
- Nicotine not carcinogenic, but is addictive substance in cigarettes

Nicotine Dependence: Effects on Brain

- Nicotine powerful stimulant-like drug, fast acting, short acting
- Works on brain receptors, leads to dopamine release
- Primary physical effects:
  - ↑ heart rate, BP
  - ↑ metabolism
  - ↑ endorphins, cortisol



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Nicotine Dependence is an Addiction

- Nicotine effects on brain:
  - ↑ Pleasure
  - ↑ Concentration
  - ↑ Task Performance
  - ↑ Mood
  - ↓ Hunger
  - ↓ Anxiety

Tolerance + Withdrawal

- Withdrawal Symptoms
  - ↑ Restlessness
  - ↑ Irritability
  - ↑ Anxiety
  - ↑ Depression
  - ↑ Appetite
  - ↓ Concentration

Smoking resolves negative withdrawal symptoms

Nicotine Dependence is a Chronic and Recurring Disorder

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2008 Clinical Practice Guidelines - Evidence-Based Tobacco Treatments

Behavioral Treatment

- Intensive treatments most effective
  - Problem Solving
  - Support
- Brief treatments, can double quit rates
  - *5A* Model
  - Quitting is process
  - Delivered by range of providers
  - Should be offered where smokers receive care

Medication Treatments

- Effective Medications:
  - Nicotine Patch (OTC)
  - Nicotine Gum (OTC)
  - Nicotine Lozenge (OTC)
  - Nicotine Inhaler
  - Nicotine Nasal Spray
  - Bupropion
  - Varenicline
- Meds are 2-3x more effective than placebo
- Certain combos effective

Combining Behavioral & Medication Treatments is Most Effective

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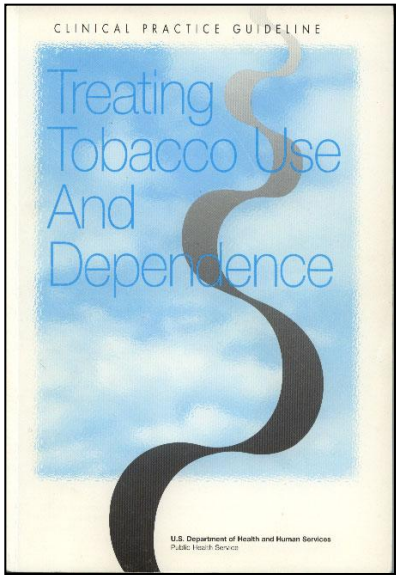
2008 Clinical Practice Guidelines: Recommendations



- Tobacco dependence: chronic disorder, requires repeated intervention
- Clinicians & healthcare systems should consistently identify smoking status & offer treatment to every smoker
- Quitlines effective & cost effective
- Clinician training ↑ delivery of care, doubles successful quit rates for smokers
- Providing insurance coverage ↑quit rates. All insurers should provide coverage for counseling and medications.
- Tobacco treatments cost effective.

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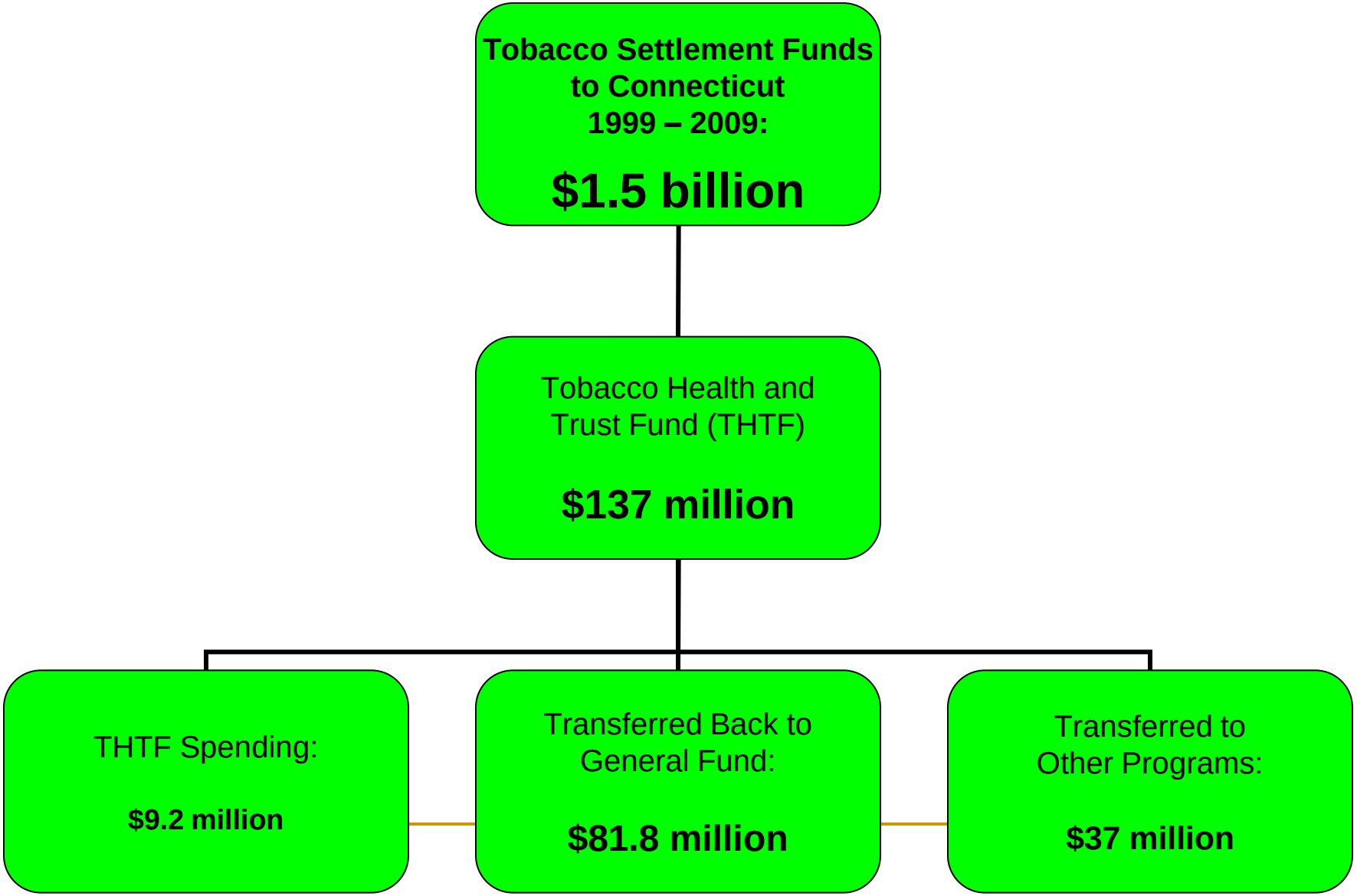
Cost-Effectiveness of Prevention

Preventive Procedure	Cost / year of life saved
Statin (45 – 75 year old male, no heart disease, cholesterol 250 – 300)	$105,000 - $270,000
Front airbags in automobiles	$96,000 - $213,000
Annual mammography (55 – 65 year old)	$32,000 - $120,000
Diuretic for high blood pressure	$22,000
Brief smoking cessation counseling + nicotine patch	**$2,900**
Intensive smoking cessation counseling + nicotine patch	**$2,000**

Smoking Cessation is the Gold-Standard for Cost-Effectiveness

Source: Graham, J., Corso, P., Morris, J., Segui-Gomez, M. and Weinstein, M. 1998. *Evaluating the Cost-Effectiveness of Clinical and Public Health Measures*. Annual Review of Public Health, 19:125-152.; [1] Cromwell J, Bartosch WJ, Fiore MC, Hasselblad V, Baker T, et al. 1997. Cost-effectiveness of the clinical practice recommendations in the AHCPR guideline for smoking cessation. *Journal of the American Medical Association,* 278:1759–66.

Tobacco Settlement Fund Transfers to THTF and Fund Disbursements: 1999 - 2009



THTF Disbursements FY03-FY10

Category	FY03-08	FY09	FY10	Total
Counter Marketing	$450,000	$2,000,000	$1,650,000	$4,100,000
Website Development	$50,000			$50,000
Cessation Programs (Community-Based)	$1,500,000	$412,456	$750,000	$2,662,456
Cessation for Mentally Ill		$1,200,000	$800,000	$2,000,000
Quit-line	$287,100	$2,000,000	$1,650,000	$3,937,100
School-Based		$500,000	$500,000	$1,000,000
Lung Cancer Pilot		$250,000	$250,000	$500,000
Evaluation		$500,000	$300,000	$800,000
Innovative Programs			$477,745	$477,745
Total	**$2,287,100**	**$6,862,456**	**$6,377,745**	**$15,527,301**

Biomedical Research Grants FY05 to FY09

Biomedical Research Trust Fund:

- Established FY02
- $24 million from Master Settlement
  - $5,926,823 to various grantees:
    - 35% tobacco related
    - 65% cancer related
- At least $8 million transferred back to GF

Connecticut Quit-line Experience

- BRFSS (2008): 429,500 smokers in Connecticut
- DPH telephone Quit-line since FY03 with telephone counseling only
- Quit-lines with counseling *and* medication have higher abstinence rates (28.1%)
- Enhanced counseling and nicotine replacement started July 2007:
  - >6,000 enrolled in 3 weeks; NRT supply exhausted

Connecticut Quit-line Experience:

- 8,405 registrants FY08:
  - 35.4% Medicaid or uninsured
  - At 13 month evaluation:
    - 27.3 % of counseling and NRT clients still not smoking
- NRT reinitiated April 2009:
  - 51.68% Medicaid or uninsured
- $2 million investment in quit-line:
  - reach ~2% of smokers
  - 3,186 (~ 1%) fewer smokers annually

Community Health Centers:

Cessation Programs for Pregnant Women and Women of Childbearing Age

Participants	Percent
16 – 24 years old	15
Hispanic	34
Black	15
HUSKY	51
SAGA	14
Uninsured	9
< $10,000 annual income	54
Previous quit attempts	53
Cessation/smoking reduction rate	64

DPH, Tobacco Control Program
PJC

Smoking Among Medicaid Recipients

- Smoking prevalence 36-40%:
  - Unchanged over last decade
  - ~37,800 Medicaid recipients are smokers
- Connecticut is one of only 5 states with no smoking cessation coverage for Medicaid recipients
- Quit-line model ($385/person), 25% participation:
  - cost $3.64 million
  - 2,580 fewer smokers

Secondhand Smoke (SHS)

- >126 million non-smoking Americans exposed to SHS in homes, vehicles, workplaces and public places
- SHS increases risk of developing heart disease 25-30%
- SHS contributes to 22,700 - 69,600 premature deaths from heart disease each year
- Eliminating indoor smoking only way to fully protect non-smokers from SHS

Smoke-free Laws

- Connecticut Clean Air Act:
  - effective 10/03, bars 4/04
  - Exemptions: correctional facilities, public housing, psychiatric facilities, workplaces <5 employees, casinos, private clubs
- Twenty-two states have 100% smoke-free laws in all workplaces, restaurants and bars
- Smoke-free laws associated with reduction in hospitalizations for acute heart attack

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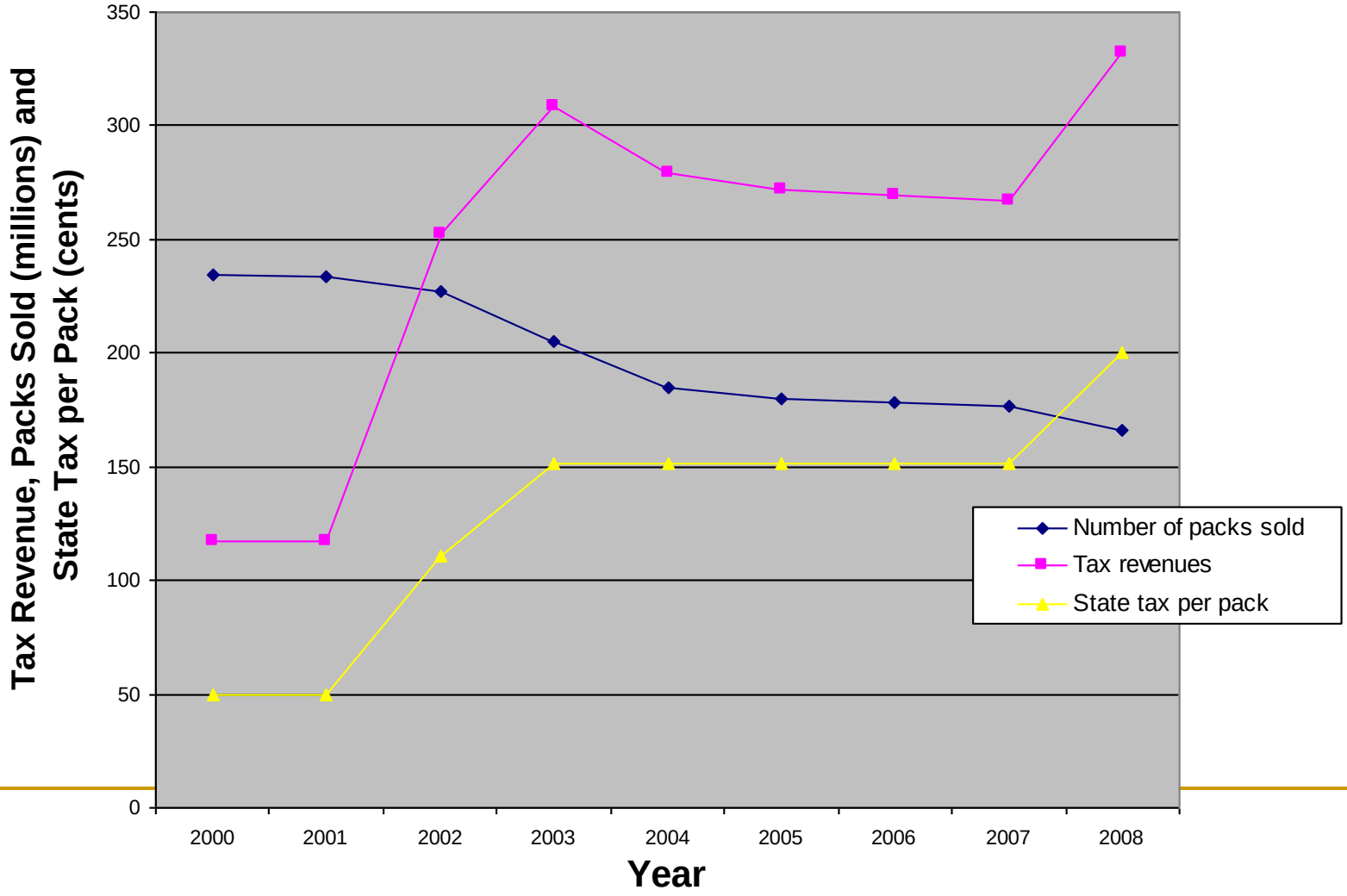
Cigarettes Sold, Tax Revenues and State Tax Per Pack in Connecticut: 2000 - 2008



Cost of Smoking to Connecticut

- 362,263 workers who smoke in Connecticut (BRFSS; BEA)
- 0.035 YPLL per worker who smokes (MMWR)
- Lost sales and income tax revenue (2008):
  - $51 - $99 million
- Associated health care costs:
  - $2 billion overall
  - $507 million Medicaid

Costs of Smoking and Benefits of Smoking Cessation

Health and Revenue Costs	Annual Savings
YPLL among Connecticut workers who smoke	12,539 YPLL
General sales and state income tax revenue	$51 - $99 million
Associated health care costs (2008 dollars)	$2 billion
Medicaid health care costs (2008 dollars)	$507 million

The MassHealth Benefit: A Case Study

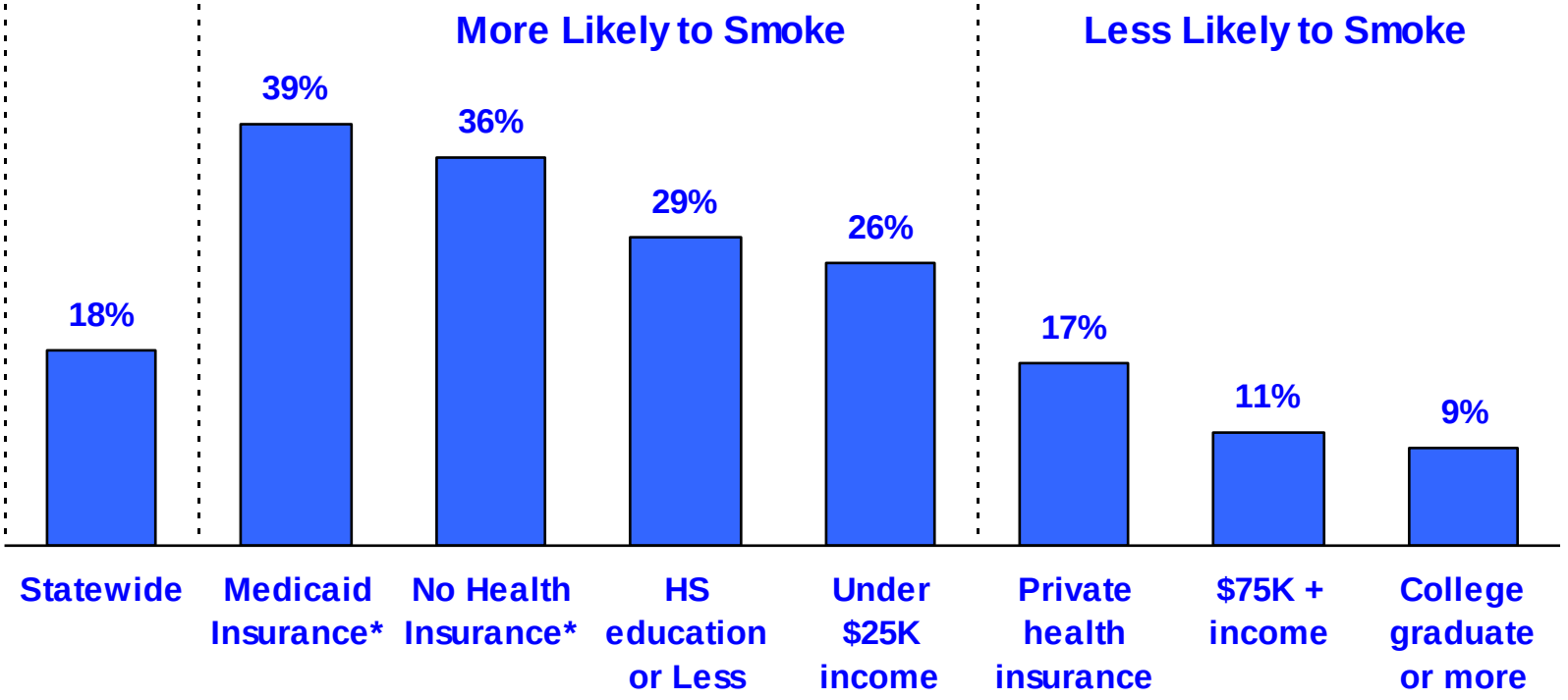
Russet Morrow Breslau
Tobacco Free Mass
www.tobaccofreemass.net
Russet.MorrowBreslau@cancer.org

Background – Prior to 2006

- Massachusetts' overall smoking rate slowly declining.
- Low socioeconomic groups smoking at higher rates than the rest of the population.
- MassHealth smoking rate holding flat – nearly 40%, more than twice the Massachusetts state average.
- Demand for help to quit smoking high.

Who Smokes? Massachusetts 2005

Prior to Implementation of the MassHealth Benefit



* Collapsed five years of BRFSS data (2001-2005) for estimate

Source: Massachusetts Behavioral Risk Factor Surveillance System (BRFSS) 2005

Cost of Tobacco in Massachusetts

- $4.3 billion annual public and private health care expenditures related to tobacco use in Massachusetts; $1 billion through MassHealth.
- $3.7 million spent by Big Tobacco every week in Massachusetts.
- $4.5 million currently being spent on tobacco prevention and cessation in Massachusetts.

Setting the Stage for a Comprehensive Benefit

- Legislation filed in 2005 that would have funded a cessation benefit.
- Also in 2005, TFM successfully fought for MassHealth coverage for pregnant women and mothers with children aged three and under.

MassHealth Benefit in Health Reform Law

- Passed in April 2006 and implemented in July
- Passed as two-year pilot program
- MassHealth worked with the Massachusetts Tobacco Cessation and Prevention Program (MTCP) on a comprehensive cessation benefit with very low co-pays ($1-$3)
    - FDA-approved medication – OTC and prescription, including Chantix, Zyban, and the patch
    - Behavioral counseling

Promotion of Benefit

• The Massachusetts Tobacco Cessation and Prevention Program (MTCP) promoted the benefit through radio and transit ads and extensive community outreach.

Dramatic Results

- In the first 2.5 years of the benefit's implementation:
  - Over 75,000 MassHealth members used it to try to quit smoking
  - This represents 40% of all smokers on MassHealth—a figure unprecedented in the nation.

- The MassHealth smoking rate fell by 10% a year—falling 26% in the first 2.5 years of its implementation, from 38.2% to 28.3%.

Dramatic Near-Term Health Impact
MassHealth Adult Members Ages 18-64

- 38% drop in heart attack hospitalizations among cessation benefit users
  - Measured the first year after individual access of the benefit
  - Fell from 3.2 to 2.0 per 1,000 benefit users
- 17% fewer emergency department visits for asthma symptoms
  - Measured the first year after individual access of the benefit
  - Fell from 22.7 to 18.7 per 1,000 benefit users
- 17% fewer claims for adverse maternal birth complications
  - Measured since benefit was implemented
  - Fell from 31.1 to 25.7 per 1,000 benefit users
  - Study looked at ectopic pregnancy, pre-term labor, and hemorrhaging during pregnancy and/or delivery

Next Steps

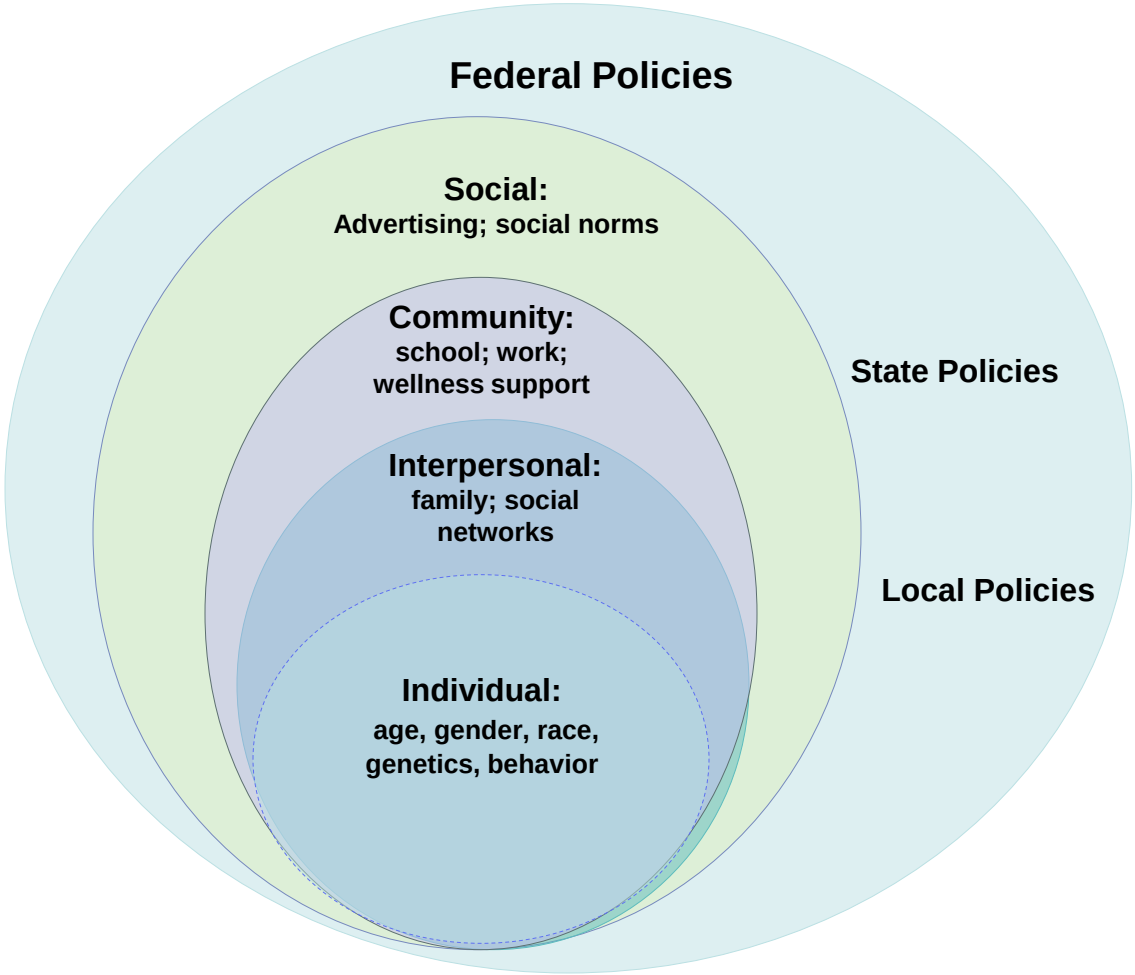
- Expand cessation benefits to all publicly-subsidized health plans
  - Commonwealth Care
  - Group Insurance Commission (GIC)

- Ensure adequate funding for the state's tobacco control program

Consider:

- Medicaid and insurance coverage for evidence-based (EB) smoking cessation:
  - Both counseling and pharmacological
  - Full panel of FDA approved medications
  - Integrated into sites where care is delivered
  - Unlimited episodes coverage
- Fully fund the Quit-line:
  - Both counseling and pharmacological
- Target at-risk populations:
  - Medicaid recipients
  - Hispanic residents
  - Youth
  - Those with psychiatric and substance abuse disorders
- Clinician training in EB treatment

Representation of the Ecological Model



Adapted from the CDC. 2007. *The social-ecological model: A framework for prevention*. Available at http://www.cdc.gov/ncipc/dvp/Social-Ecological-Model_DVP.htm. Accessed April 2, 2009.