



# Evidence-based Practice

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# Learning objectives

- At the end of this presentation you will be able to
  - Identify and access research and resources
    - 4 primary sources
  - Define evidence-based practice
  - Help patients to distinguish effective treatment
  - Keep current with tobacco dependence treatment resources

# Tobacco Treatment Specialists

- Practice evidence based medicine
- Provide a clear message identifying proven and effective tobacco dependence treatment
- Can knowledgeably discuss the evidence supporting treatment

People who are struggling with tobacco dependence are bombarded with bogus, misleading, and ineffective alternatives and sham treatments



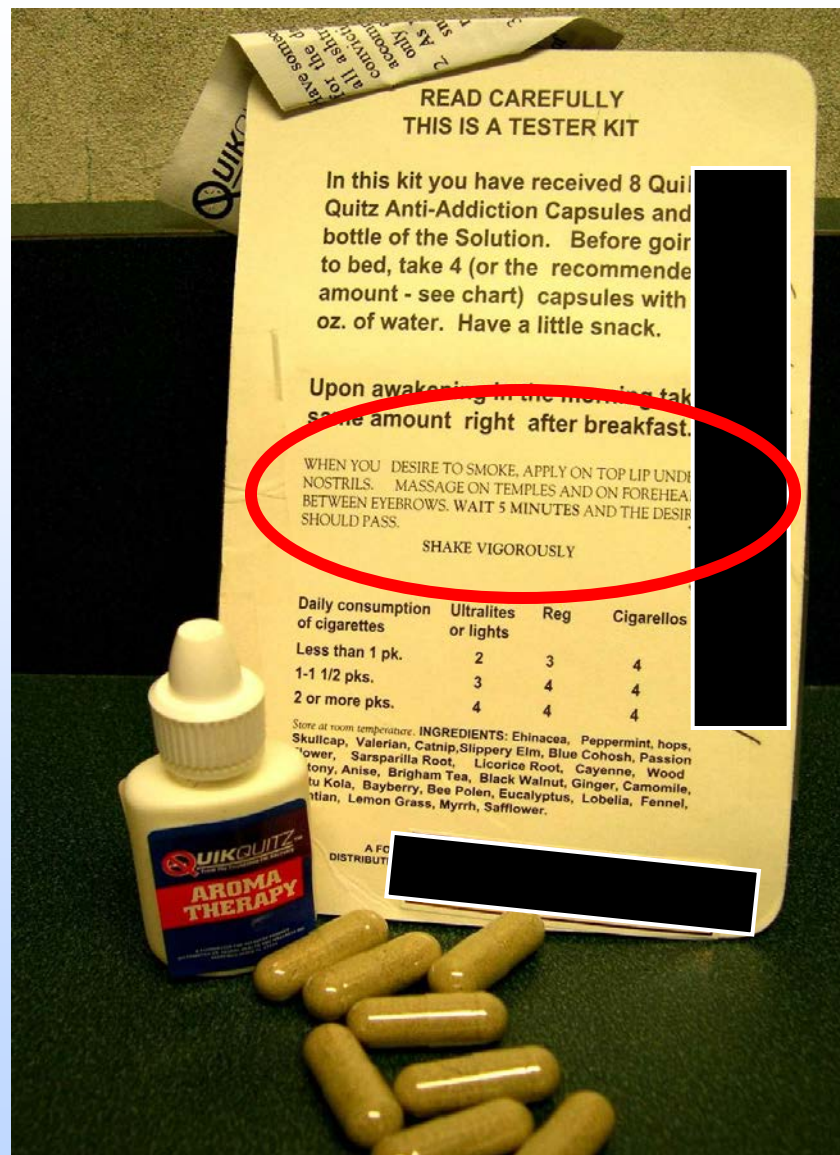


Stop smoking  
with hypnosis



No medicine,  
the only way







HOME



THE SHOT



SUPPORT



OUR STAFF







APPOINTMENT

# Stop Smoking Clinic™

Ready to Quit?  
Call us now at  
(941) 330 1696

## Smoking

Why Quit?   
[Save Money](#)   
 Your Health   
 Just Tobacco? 

## Ways to Stop

## About our Program

Easy as   
 The  Program  
 The SMART™ Shot

## Help & Support

What's the Cost

## Our Staff

## Appointments

Go where leading hospitals and physicians send  
their patients, employees and family members  
to quit smoking!

## Stop Smoking Clinic™

Featuring the SMART™ Shot  
Greater Than 80% Success Rate



Click [here](#) to learn more about the  
AMI Stop Smoking Clinic™

Requires Microsoft Media Player: 

At the [AMI Stop Smoking Clinic](#) — we have developed a safe and effective way to quit smoking **that far exceeds** that of nicotine replacement therapy (inhalers, gums, patches) or Zyban®. In addition, you have your own personal support system, composed of a **pulmonologist** (lung specialist), **respiratory therapist** and **counselors**.

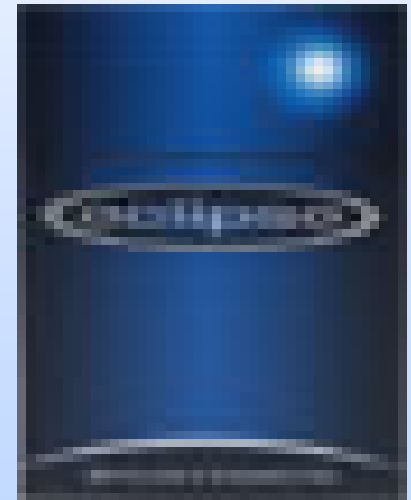
# Tobacco Industry



'Safe cigarette' claimed to cut cancer by 90%



PhilipMorrisUSA





# Recommended sources

1. Surgeon General reports on Tobacco
2. Best Practices Comprehensive Tobacco Control (CDC) and Framework Convention on Tobacco Control (WHO)
3. Cochrane Reviews
4. USPHS Clinic Practice Guideline

# Scientific Evidence

- Clinical experience
- Basic laboratory research
- Observational studies
- Randomized Control Trial (RCT)
- Meta-analysis and systematic reviews

# Recommended sources

- 1. Surgeon General reports on Tobacco**
2. Best Practices Comprehensive Tobacco Control (CDC) and Framework Convention on Tobacco Control (WHO)
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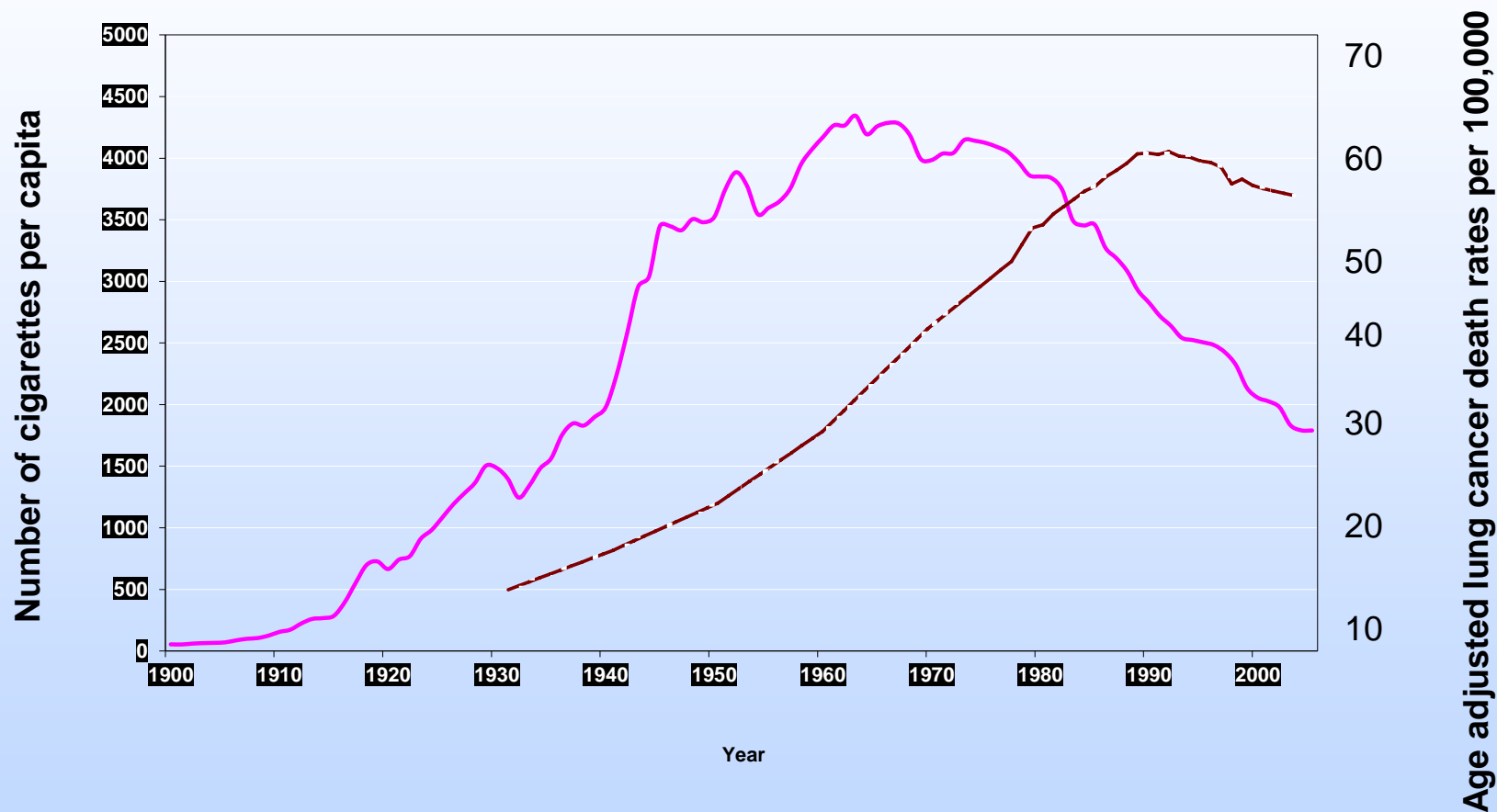
# First Surgeon General Report

The question about cause and effect



# Association is not causation

## 1900-2005 U.S. Per Capita Cigarette Consumption and 1930-2005 Age Adjusted Lung Cancer Death Rate per 100,000



NCHS Vital Statistics; death rates are age-adjusted to 2000 US standard population

# 1964 Surgeon General Report

- Strength and association
- Consistency
- Specificity
- Temporality
- Biological gradient
- Biological plausibility
- Experimental evidence





# Most Recent Surgeon General Reports

<http://www.cdc.gov/tobacco/>

- The Health Consequences of Involuntary Exposure to Tobacco Smoke 2006
  - The Debate is Over
- How Tobacco Smoke Causes Disease: The Biology and Behavioral Basis for Smoking-Attributable Disease 2010
- Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General, 2012

# Recommended sources

1. Surgeon General reports on Tobacco
- 2. Best Practices Comprehensive Tobacco Control  
And  
Framework Convention on Tobacco Control (WHO)**
3. Cochrane Reviews
4. USPHS Clinic Practice Guideline

# What works for community interventions

- Best Practices Comprehensive Tobacco Control (CDC)
- MPOWER (WHO – FCTC)

# Best Practices for Comprehensive Tobacco Control Programs

[http://www.cdc.gov/tobacco/tobacco\\_control\\_programs.htm](http://www.cdc.gov/tobacco/tobacco_control_programs.htm)

- State and community interventions
  - What should state plans include
- Health communication interventions
- Cessation interventions
- Surveillance and evaluation
- Administration and management

# MPOWER

<http://www.who.int/tobacco/mpower/package/en/index.html>

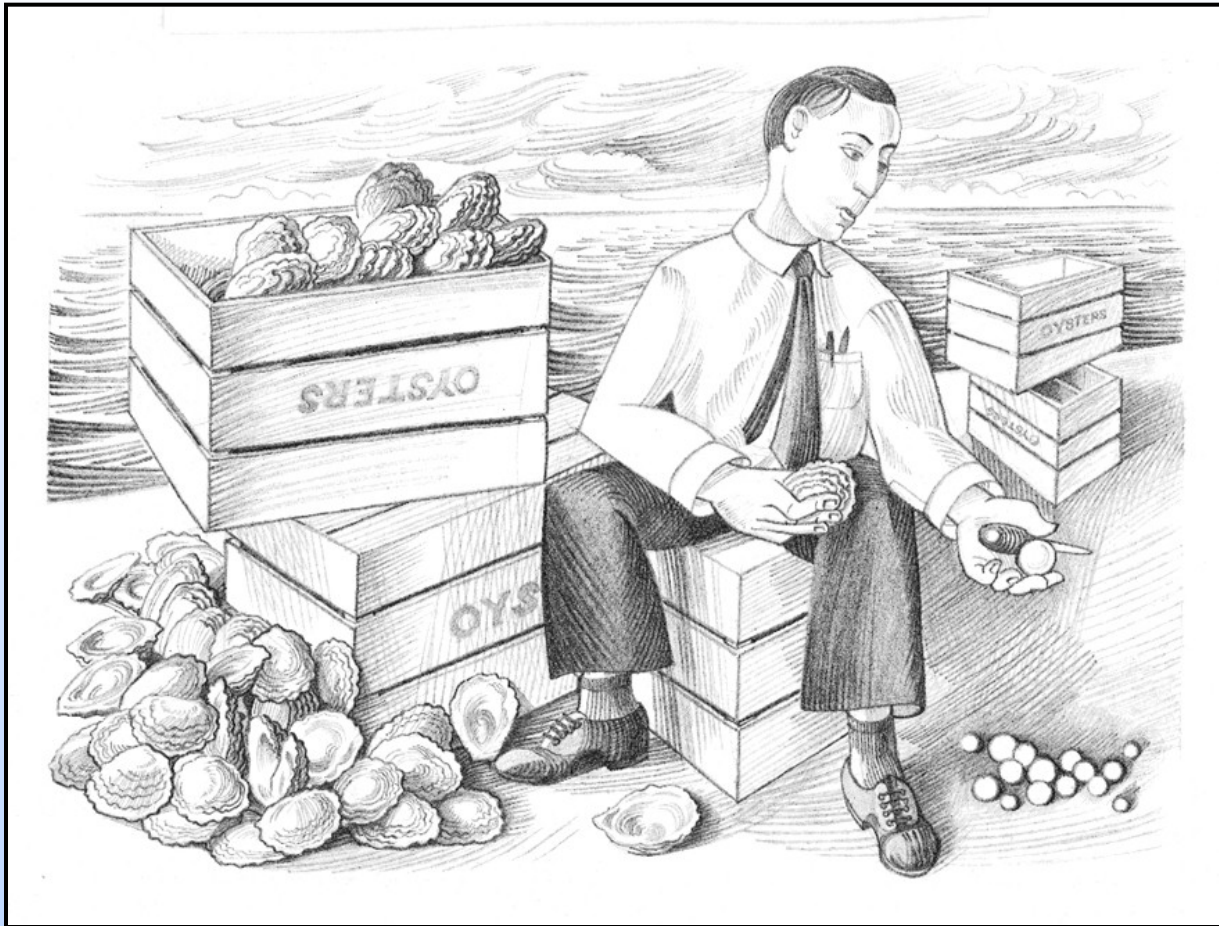
- Monitor tobacco use and prevention policies
- Protect people from tobacco smoke
- Offer help to quit tobacco use
- Warn about the dangers of tobacco
- Enforce bans on tobacco advertising, promotion and sponsorship
- Raise taxes on tobacco

<http://www.who.int/fctc/en/>

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# Systematic Reviews and Meta-analysis



Greenhalgh, T:BMJ 315:672-675, 1997

# Systematic reviews

- State objectives and search literature
- Assess study quality
- Assemble data and analyze
  - May use meta-analysis
- Prepare a critical summary



# Characteristics of a good study

- Randomization
- “Blinding”
- Placebo
- Size of study
- Complete follow-up
- Intention to treat analysis
- Biochemical validation

# Three study comparison

- Please read parts of the three studies
  - Alhatem and Black - Read first page
  - Nohlert et. Al. Read Abstract, Methods, results, Figure 1 and Table 3
  - Jorenby et. Al. Read Abstract and pages 57, 58 Table 1 and Figure 3

| Study                  | Alhatem & Black | Nohlert et al | Jorenby et al |
|------------------------|-----------------|---------------|---------------|
| Randomization          |                 |               |               |
| Blinding               |                 |               |               |
| Placebo                |                 |               |               |
| Size                   |                 |               |               |
| Follow-up and ITT      |                 |               |               |
| Biochemical validation |                 |               |               |

# Cochrane reviews provide a comprehensive resource

<http://www.cochrane.org/reviews/>

- Complementary medicine
  - Acupuncture, hypnosis, exercise, silver acetate
- Medications
  - NRT, anti-depressants, nicotinic receptor agonists, cannabinoid receptors
- Behavioral interventions
  - Self-help, individual counseling, group counseling, partner support, competitions, aversive smoking, relapse prevention
- Health care provider interventions
  - Brief visit
  - Telephone counseling
  - Workplace interventions
  - Community interventions

- Cochrane Reviews available at....

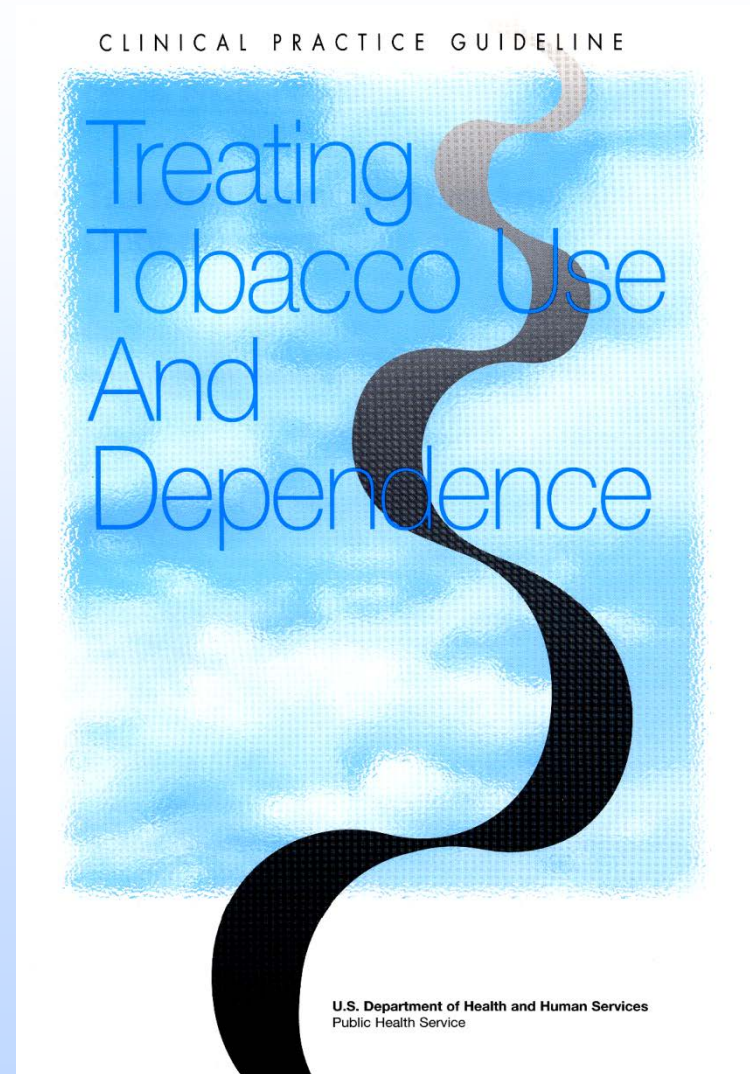
[www.treatobacco.net](http://www.treatobacco.net)

# Recommended sources

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# USPHS Clinical Practice Guideline 2008

<http://www.surgeongeneral.gov/tobacco/>



# Clinical Practice Guideline: Treating Tobacco Use and Dependence Update

- History:
  - 1996: Initial Guideline; reviewed 3,000 articles
  - 2000: Revised Guideline another 3,000 articles
  - 2008: Updated Guideline; another 2,700 articles
- Meta-analysis
  - Select appropriate trials, combine to increase reliability and power



# Clinical practice guidelines statistics

- Odds Ratio (O.R.)
- Confidence Interval (C.I.)

# Calculating Odds Ratio

| Group   | Total n | n Abstinent |
|---------|---------|-------------|
| Active  | 100     | 25          |
| Placebo | 100     | 10          |

| Group   | Ratio abstinent   | Odds abstinent | Odds ratio |
|---------|---|----------------|------------|
| Active  | $\frac{25 \text{ abstinent}}{75 \text{ not abstinent}}$ | .333           | 3.0        |
| Placebo | $\frac{10 \text{ abstinent}}{90 \text{ not abstinent}}$ | .111           |            |

# Odds ratio and confidence interval

| Medication                  | Number of arms | Estimated odds ratio (95% confidence) | Estimated abstinence rate (95% confidence) |
|-----------------------------|----------------|---------------------------------------|--|
| Placebo                     | 80             | 1.0                                   | 13.8                                       |
| Nicotine patch (6-14 weeks) | 32             | 1.9 (1.7-2.2)                         | 23.4 (21.3-25.8)                           |
| High dose patch (> 25 mg.)  | 4              | 2.3 (1.7-3.0)                         | 26.5 (21.3-32.5)                           |
| Patch + ad-lib gum or spray | 3              | 3.6 (2.5-5.2)                         | 36.5 (28.6-45.3)                           |
| Varenicline (2 mg/day)      | 5              | 3.1 (2.5-3.8)                         | 33.2 (28.9-37.8)                           |

Fiore MC, Bailey WC, Cohen SJ. (U.S. Department of Health and Human Services. Public Health Service). Treating Tobacco Use and Dependence. 2008 May.

# USPHS Guidelines

## 10 Recommendations

1. Tobacco dependence is a chronic disease
  1. requires repeated intervention
  2. multiple attempts to quit.
2. Systems should identify and treat all tobacco users.
3. Tobacco dependence treatments are effective. Every patient willing should use counseling and medications.
4. Brief tobacco dependence treatment works.

# USPHS Guidelines

## 10 Recommendations

5. Individual, group, and telephone counseling are all effective.
6. All patients should be encouraged to use medications unless contraindicated.
7. Counseling and medication are effective alone and more in combination.

# USPHS Guidelines

## 10 Recommendations

8. Telephone quitline counseling is effective.
9. If a tobacco user currently is unwilling to make a quit attempt, use motivational treatments.
10. Tobacco dependence treatments are both clinically effective and highly cost-effective.
  1. Insurers and purchasers should ensure that all insurance plans include counseling and medication as covered benefits.

# Making the case for treating tobacco dependence

# Rationale for coverage

- Smoking is the leading preventable cause of death in the US (1,2)
- Smokers who quit will, on average, live longer and have fewer years living with disability (3, 4)
- In 1999, each adult smoker cost employers \$1,760 in lost productivity and \$1,623 in excess medical expenditures (5)
- Tobacco treatment counseling is one of the top priorities among recommended preventive services (6,7)



# Rationale for coverage

- There is a dose response relationship between treatment intensity, treatment effectiveness, and cost effectiveness (1)
- Cost sharing for preventive care reduces utilization (8,9,10,11)
- Cost sharing for prescription drugs and nicotine replacement medications can reduce utilization and negatively impact treatment outcomes (9, 12,13)

# Provide coverage for evidence-based treatment

- As recommended by the Public Health Service
  - Medication
    - Over the counter
    - Prescription
    - In combination and as needed
  - Counseling
    - Group, individual, phone
- Eliminate or minimize co-pays or deductibles
  - even small copayments reduce utilization



U.S. OFFICE OF PERSONNEL MANAGEMENT

# YOU CAN AFFORD TO **QUIT** SMOKING

**No more copays,  
coinsurance, deductibles,  
or dollar limits.**

Talk to your healthcare provider today.

**New package of benefits  
—Take advantage of it.**



All **FEHB** plans now offer 100% coverage.

# Comparably very cost effective

| Therapy   | Patient  | Cost per yrs of life saved |
|---|--|----------------------------|
| Physician counseling and medication smoking cessation | Tobacco dependent  | \$1,300-\$3,900            |
| <b>B</b> -blocker                                     | <u>Post MI</u><br>High risk<br>Low risk  | \$ 3,600<br>\$ 20,200      |
| Intensive glucose control                             | <u>Diabetes</u><br>Newly diagnosed type 2                                      | \$ 35,300                  |
| Lovastatin  | <u>Cholesterol &gt; 300 mg/dL</u><br>Men aged 55-64 with no other risk factors | \$ 78,300                  |
| CABG  | Two-vessel CAD, severe angina  | \$ 42,500                  |

Probstfield, 2003

# Summary

- TTS and evidence based practice
- Obtain four reliable sources for evidence based information.
- Remain current with new information.
- The evidence supports that treating tobacco dependence is effective and highly cost-effective

## References

See attached