

Public Health 101

The Science and Art of Evidence-based
Disease Prevention and Health Promotion

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What is Public Health?

<https://www.youtube.com/watch?v=oQkGx6gRGIY&list=UUHlzppBTg2w8NbZOIWbb5Yg>

Public Health 101

- What is public health? The public health system?
- Major accomplishments of public health in the 20th century and early 21st century US
- Promise of prevention

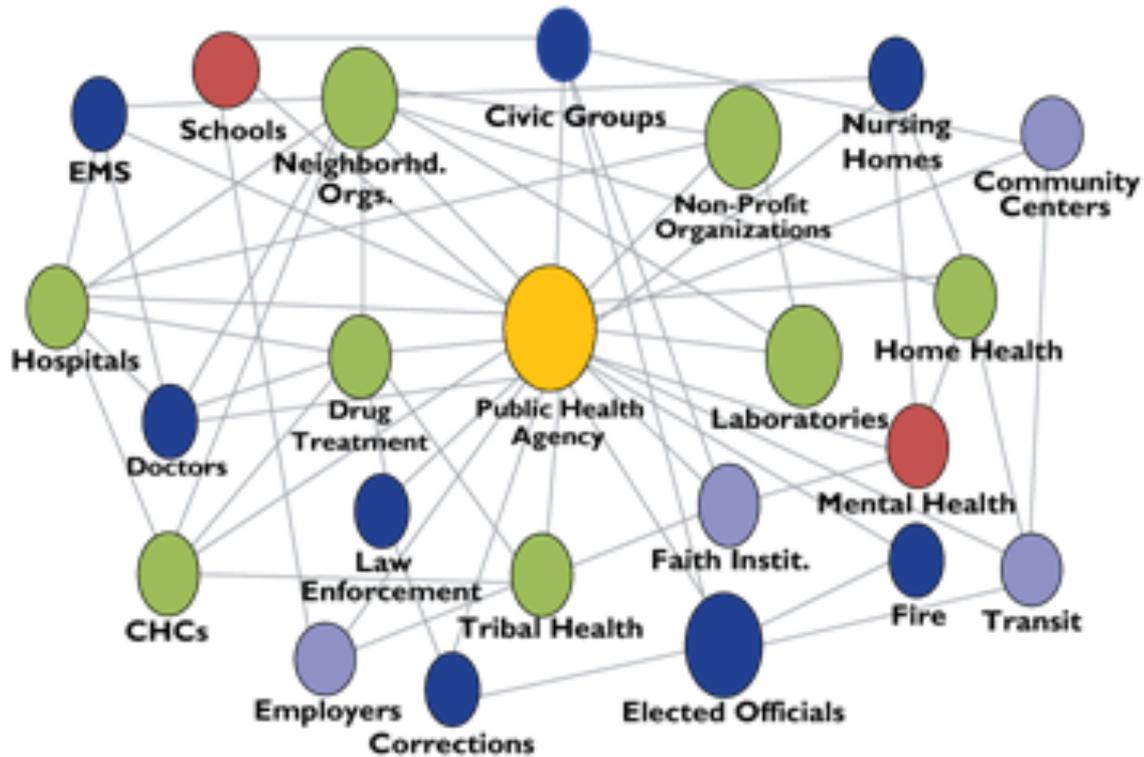
Public Health and the Public Health System

- **Public health – Organized measures, public and private, to prevent disease, injury, and disability; promote physical and mental health; and protect and prolong life among the population as a whole.**
- **Public health system – All public, private, and voluntary entities that contribute to the delivery of essential public health services within a jurisdiction.**

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Public Health System



Local Public Health Agencies

- Southern Nevada Health District
www.southernnevadahealthdistrict.org
- Washoe County Health District
www.washoecounty.us/health
- Carson City Health and Human Services
www.gethealthycarsoncity.org
- Nevada Division of Public and Behavioral Health
www.health.nv.gov

What is Public Health?

- Public health is concerned with **preventing** health problems from happening in the first place, **promoting** healthy behaviors and choices, and **protecting** the health of entire populations – from neighborhoods, to towns and cities, to entire countries



Public Health
Prevent. Promote. Protect.

Prevention Levels or Strategies

1. Improvement in the standard of living
2. Public health interventions to reduce the incidence of illness and injury in the population
3. Preventive medical care performed by health care providers

Strategy 1: Improved Living Standards

Improvements in:

- Living conditions and housing
- Working conditions and wages
- Sanitary conditions and waste removal
- Access to safe and clean drinking water
- Food production and access to healthy diets
- Socioeconomic status – namely income and education

Strategy 2: Public Health Interventions

Evidence-based interventions to reduce the incidence of illness and injury in a population, such as:

- Water fluoridation
- Mass immunization for infectious diseases
- Increased tobacco taxes
- Mass education on the dangers of high-fat diets
- Improved access to birth control and family planning services

Strategy 3: Preventive Medical Care

Evidence-based preventive medical care provided by health care providers, such as:

- Colon cancer screening
- Periodic breast examinations and mammograms
- Prenatal care
- Screening and treatment of hypertension
- Cervical cancer screening

Key Principles of Public Health

- A primary focus on populations rather than individuals
- A public service ethic tempered by concerns for the individual
- Employs the full spectrum of interventions aimed at the environment, human behavior and lifestyle, and medical care
- Emphasis on prevention and health promotion for the whole community

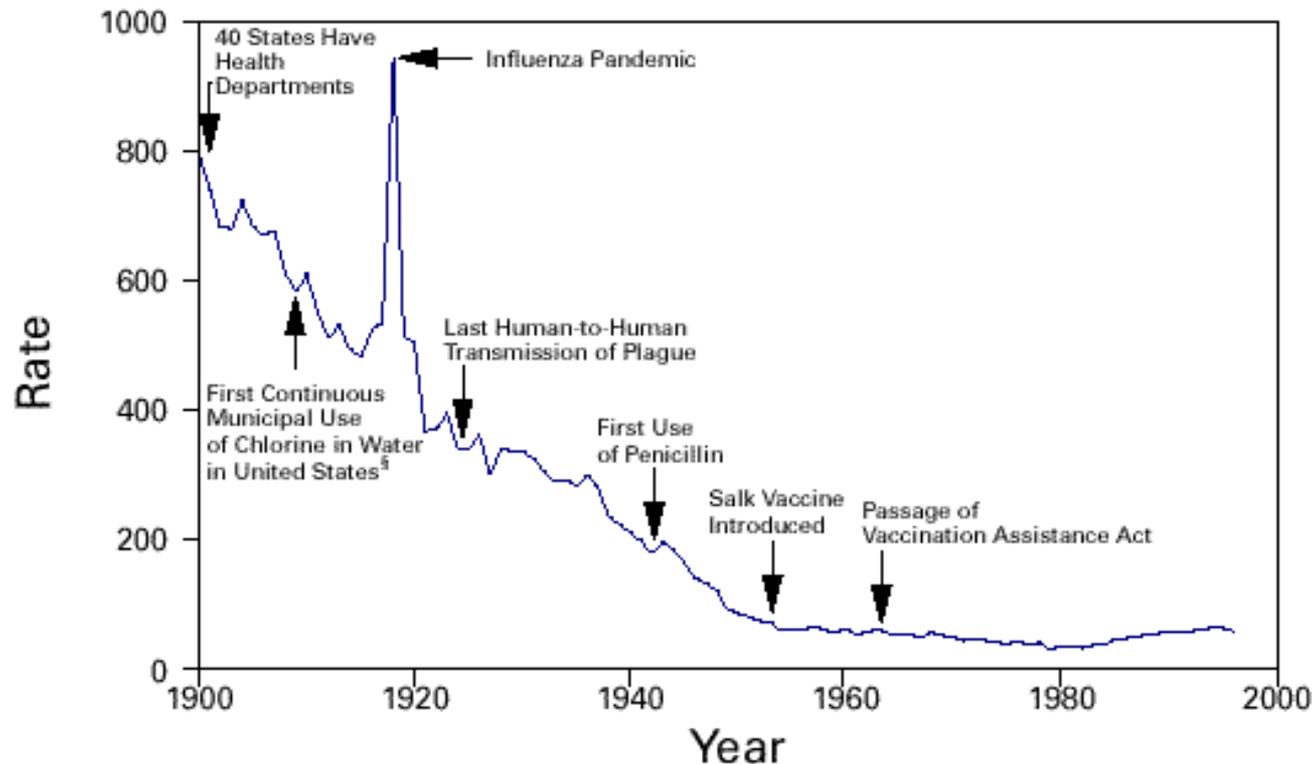
Ten Great Public Health Achievements in the in the Twentieth Century

- Vaccinations
- Safer workplace
- Safer and healthier food
- Motor vehicle safety
- Control of infectious diseases
- Decline in deaths from heart disease and stroke
- Family planning
- Recognition of tobacco use as a health hazard
- Healthier mothers and babies
- Fluoridation of drinking water

Source: <http://www.cdc.gov/about/history/tengpha.htm>

Control of Infectious Diseases

FIGURE 1. Crude death rate* for infectious diseases — United States, 1900–1996†



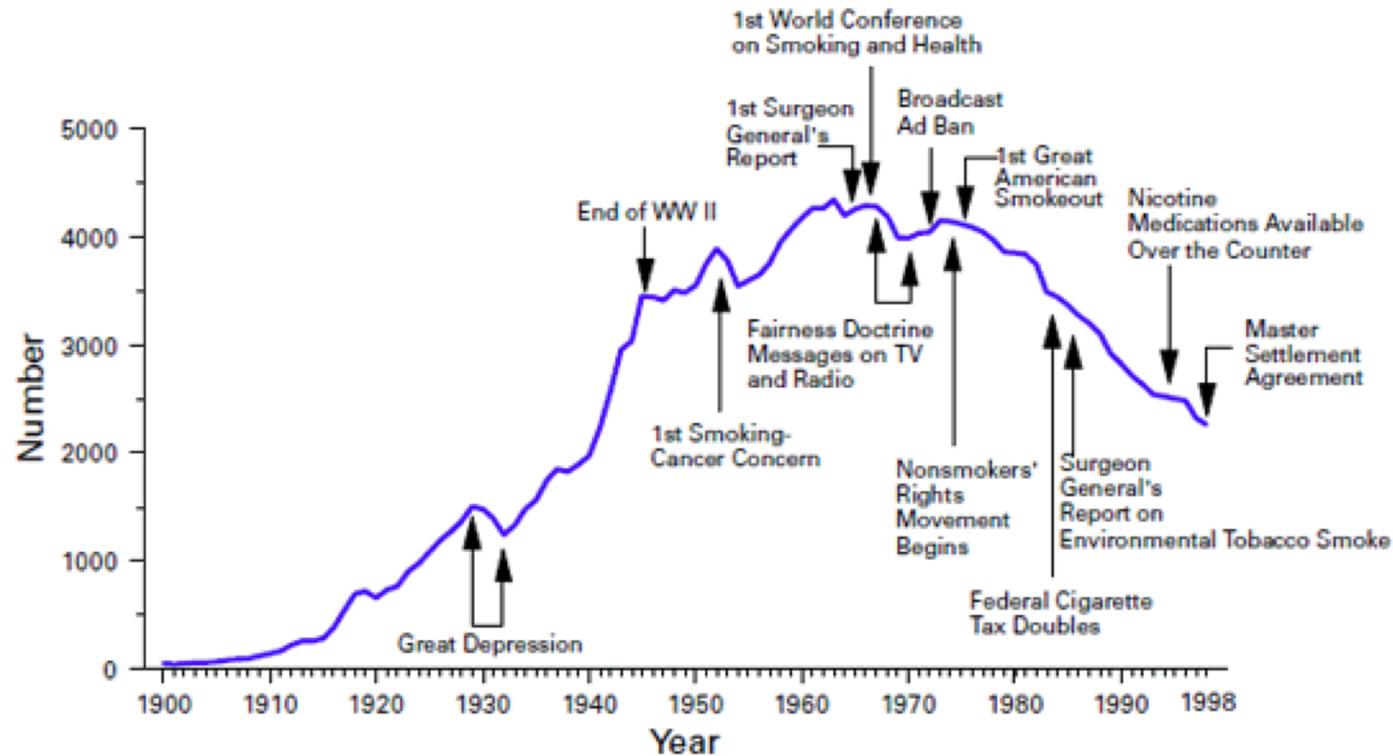
*Per 100,000 population per year.

†Adapted from Armstrong GL, Conn LA, Pinner RW. Trends in infectious disease mortality in the United States during the 20th century. *JAMA* 1999;281:61–6.

§American Water Works Association. Water chlorination principles and practices: AWWA manual M20. Denver, Colorado: American Water Works Association, 1973.

Tobacco Control

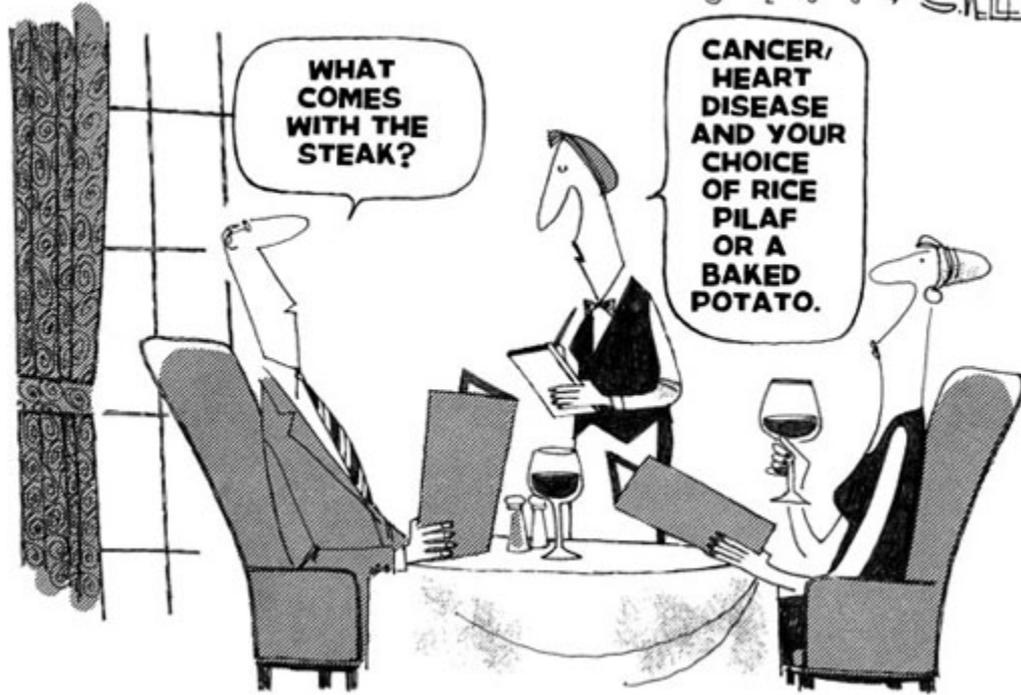
FIGURE 1. Annual adult per capita cigarette consumption and major smoking and health events — United States, 1900–1998



Sources: United States Department of Agriculture; 1986 Surgeon General's Report.

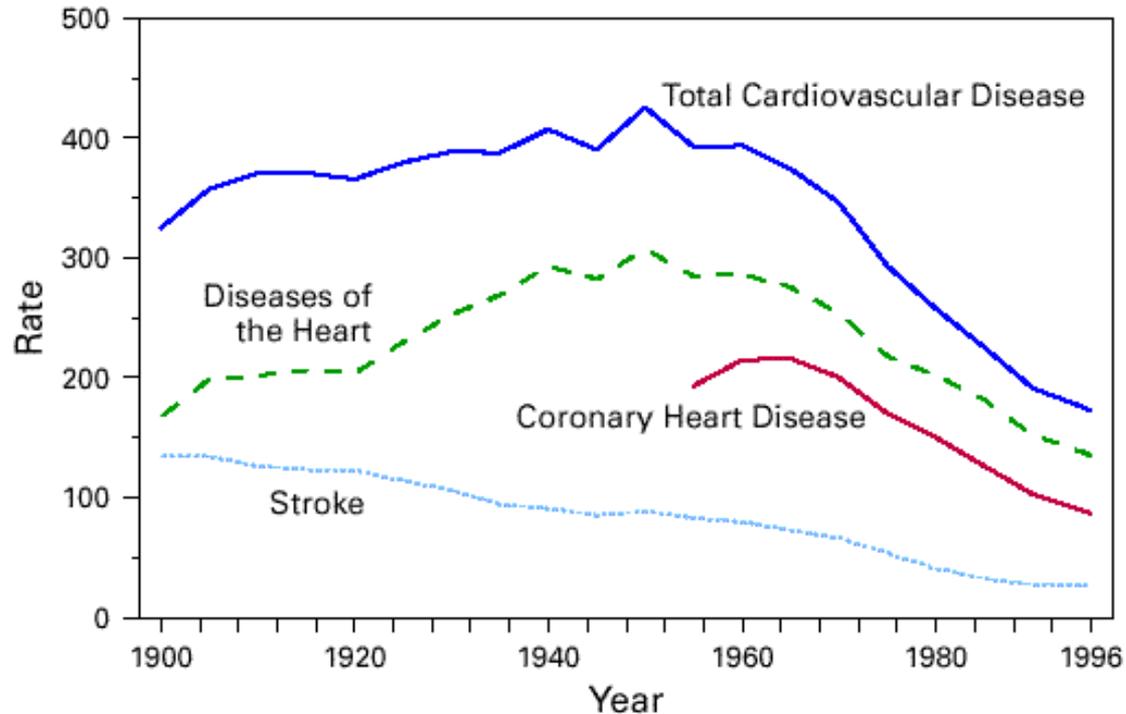
Tobacco Control in Nevada

- Utilization of MSA dollars for tobacco control and prevention (1999 to present)
- Increase in tax on cigarettes from 35 to 80 cents per pack (2003)
- Nevada Clean Indoor Air Act (2006) and other efforts to reduce exposure to second-hand smoke



Declines in Deaths from Heart Disease and Stroke

FIGURE 1. Age-adjusted death rates* for total cardiovascular disease, diseases of the heart, coronary heart disease, and stroke,† by year — United States, 1900–1996



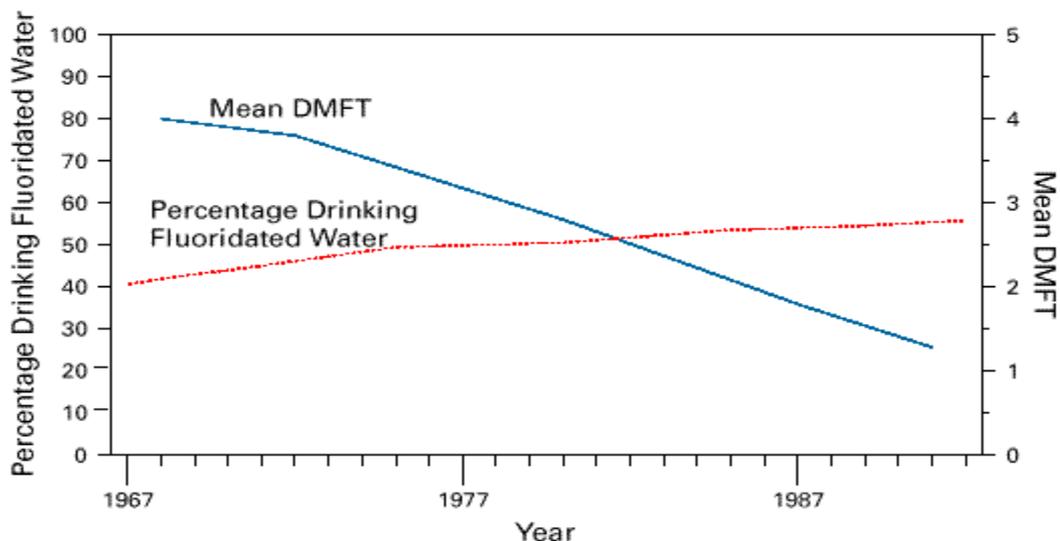
*Per 100,000 population, standardized to the 1940 U.S. population.

†Diseases are classified according to *International Classification of Diseases (ICD)* codes in use when the deaths were reported. ICD classification revisions occurred in 1910, 1921, 1930, 1939, 1949, 1958, 1968, and 1979. Death rates before 1933 do not include all states. Comparability ratios were applied to rates for 1970 and 1975.

Source: Adapted from reference 1; data provided by the National Heart, Lung and Blood Institute, National Institutes of Health.

Fluoridation of Drinking Water

FIGURE 1. Percentage of population residing in areas with fluoridated community water systems and mean number of decayed, missing (because of caries), or filled permanent teeth (DMFT) among children aged 12 years — United States, 1967–1992

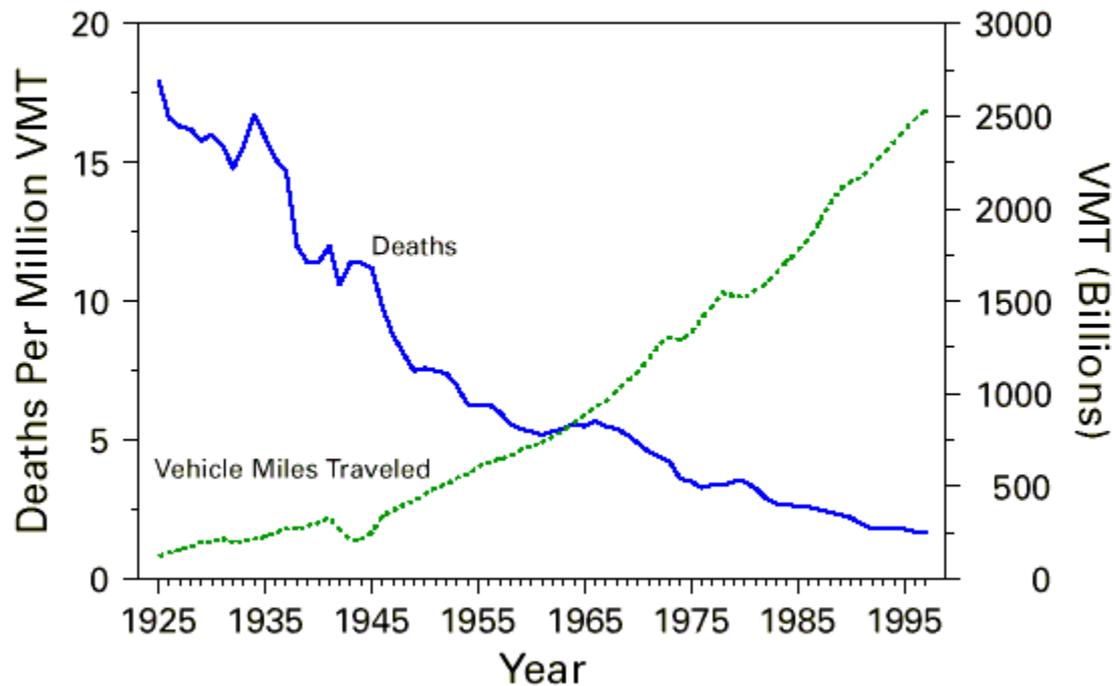


Sources:

1. CDC. Fluoridation census 1992. Atlanta, Georgia: US Department of Health and Human Services, Public Health Service, CDC, National Center for Prevention Services, Division of Oral Health, 1993.
2. National Center for Health Statistics. Decayed, missing, and filled teeth among youth 12–17 years—United States. Rockville, Maryland: US Department of Health, Education, and Welfare, Public Health Service, Health Resources Administration, 1974. Vital and health statistics, vol 11, no. 144. DHEW publication no. (HRA)75-1626.
3. National Center for Health Statistics. Decayed, missing, and filled teeth among persons 1–74 years—United States. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, Office of Health Research, Statistics, and Technology, 1981. Vital and health statistics, vol 11, no. 223. DHHS publication no. (PHS)81-1673.
4. National Institute of Dental Research. Oral health of United States children: the National Survey of Dental Caries in U.S. School Children, 1986–1987. Bethesda, Maryland: US Department of Health and Human Services, Public Health Service, National Institutes of Health, 1989. NIH publication no. 89-2247.
5. CDC, unpublished data, third National Health and Nutrition Examination Survey, 1988–1994.

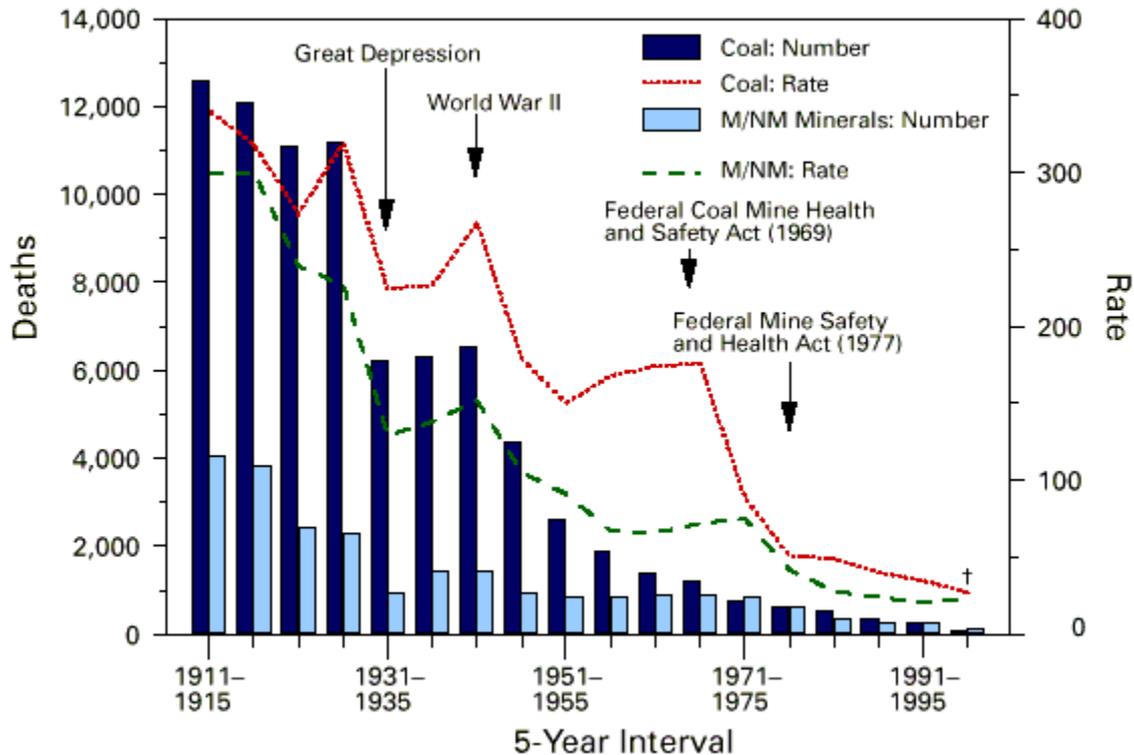
Motor Vehicle Safety

FIGURE 1. Motor-vehicle-related deaths per million vehicle miles traveled (VMT) and annual VMT, by year — United States, 1925–1997



Workplace Safety

FIGURE 4. Number of deaths and fatality rates* in mining coal and metal/nonmetallic (M/NM) minerals, by 5-year interval — United States, 1911–1997



* Per 100,000 workers.

† Data are for 1996 and 1997.

Science and Art of Public Health

- Public health:
 - Prevents epidemics and the spread of disease
 - Protects against environmental hazards
 - Prevents injury and disability
 - Promotes and encourages healthy behaviors
 - Responds to disasters and assists communities
 - Assures the quality and accessibility of health services
 - Compliments individual-level care with evidence-based, population-level interventions

The Promise of Public Health

Through evidence-based prevention –

- Countless injuries, illnesses, and even chronic diseases can be avoided
- Lives can be saved and life expectancy extended
- Health care costs and spending can be contained

“...The determinants of health are beyond the capacity of any one practitioner or discipline to manage....We must collaborate to survive, as disciplines and as professionals attempting to help our communities and each other.”

—Institute of Medicine, 1999

Final Caveat: You Get What You Pay For

- Nevada total funding for public health interventions: \$9.0 million from the SGF
- Spending per capita in Nevada: \$3.28
- Average state spending per capita: \$27.40
- Nevada's Rank Among US States: 51st
- Range: \$3.28 (NV) to \$154.99 (HI)
- Approximately 60% of total state spending is from federal sources (e.g., CDC = \$59 million)

CVS

Selling
cigarettes
doesn't fit our
being in the
business of
health...

MARGULIES
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OK, then
I guess
just
this...



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