



Kansas City, Missouri, Health Department,
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Smoking-Attributable Mortality

The first warnings about the dangers of smoking tobacco emerged in the 18th century, just 200 years after the substance was brought from America to Europe. But it was not until the 1930s that government began to “wage war” on tobacco use because of its effects on the health of the population. And, the government that led the way was headed by Adolph Hitler (*Proctor RN, The Nazi War on Cancer. 1999, Princeton Univ Press*). However, those research and prevention efforts were largely ignored by the rest of the world during and following World War II. In fact, British epidemiologist Richard Doll, who is widely credited with establishing the association between smoking and lung cancer in 1950, acknowledged that he had not read the German studies that had more conclusively proven that association years earlier. Yet, he was not unaware of German work in this area.

Today, the health effects experienced by smokers are well recognized and documented thanks to reports issued in 1964 by Surgeon General Luther Terry and in 2004 by Surgeon General Richard Camona. In addition, in 2006, Camona issued a report on the health consequences from involuntary exposure to tobacco smoke. From those reports it is clear that smoking harms nearly every organ of the body, causing many diseases and reducing quality of life and life expectancy not only in smokers but also in non-smokers who breathe the smoke from cigarettes.

The recognition that so called second-hand smoke is hazardous to the health of non-smokers has resulted in many communities and countries around the world severely restricting the social settings where smoking is permitted. On the 8th of April, voters in Kansas City will decide whether or not a citizens’ initiative to further restrict smoking in the community should replace current regulations.

From a health policy perspective, it is important to be

able to estimate the impact cigarette smoking has on the health and economy of the nation. Appendix 7-1 of the 2004 Surgeon General’s report on the health consequences of smoking discusses six approaches to calculating smoking attributable mortality along with the limitations of these methods.

The Centers for Disease Control and Prevention has developed a statistical package known as Smoking-Attributable Mortality, Morbidity and Economic Costs or SAMMEC. Using that program, the Office of Epidemiology & Community Health Monitoring, Kansas City Health Department, calculated the estimated smoking-attributable mortality in the community for the period 2002-2006. A 5-year period was used rather than just 2006 to ensure that the numbers of deaths per cause used in the calculations were sufficient to ensure a reliable estimate of smoking-attributable mortality.

Based on SAMMEC, 3,100 deaths among persons ≥ 35 years old were considered to be smoking related (see table on page 2). Those deaths represented 17.5% of the 17,673 deaths among persons ≥ 35 years old. Those deaths do not include the approximately 400 deaths that would have been attributed to secondhand smoke. Directly and indirectly, then, cigarette smoking contributed to an estimated 18.5% of all deaths in Kansas City. The estimated deaths were for a 5-year period, which translates to an estimated 700 Kansas City residents dying each year from smoking-attributable causes.

These contributions to mortality vary by sex. From the table it is clear that there were more estimated deaths from smoking-attributable causes among men than women. And, comparing the annualized age-adjusted death rates for the two sexes, men were 2.3 times more likely to die from a smoking-attributable cause than women.

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Smoking-Attributable Mortality, Kansas City, Mo, 2002-2006

(adults age 35 years and older; does not include burn or second hand smoke deaths)

Disease category	Males		Females		Total	
	Deaths	Rate ¹	Deaths	Rate	Deaths	Rate
Malignant neoplasms						
Lip, oral cavity, pharynx	31	7.1	11	1.8	42	4.1
Esophagus	52	12.4	17	2.7	69	6.7
Stomach	16	4.1	3	0.4	19	1.8
Pancreas	27	6.3	25	4.0	52	5.0
Larynx	17	3.9	8	1.4	25	2.4
Trachea, lung, bronchus	667	159.0	418	69.1	1,085	104.4
Cervix uteri	0	0.0	1	0.2	1	0.1
Kidney & renal pelvis	23	5.5	0	0.0	23	2.2
Urinary bladder	36	9.6	9	1.4	45	4.3
Acute myeloid leukemia	7	1.6	1	0.2	8	0.8
Sub-total	876	209.5	493	81.2	1,369	131.8
Cardiovascular diseases						
Ischemic heart disease	324	77.2	175	27.8	499	48.1
Other heart disease	114	29.9	83	12.6	197	18.9
Cerebrovascular disease	67	15.9	71	11.8	138	13.3
Atherosclerosis	37	11.8	17	2.4	55	5.3
Aortic aneurysm	26	6.5	23	3.5	49	4.7
Other arterial disease	3	0.9	7	1.1	10	1.0
Sub-total	572	142.2	376	59.2	948	91.3
Respiratory diseases						
Pneumonia, influenza	35	9.9	31	4.6	66	6.4
Bronchitis, emphysema	36	9.2	32	5.1	68	6.5
Chronic airway obstruction	326	86.2	323	50.3	649	62.6
Sub-total	397	105.3	386	60.0	783	75.5
Total	1,845	457.0	1,255	200.4	3,100	298.6

¹ Average annual age-adjusted death rate; US 2000 standard population

According to the Missouri Department of Health and Senior Services, the most recent estimates of smoking prevalence among adults in Missouri are 23.2% statewide and 20.0% in the Kansas City metropolitan region. Those estimates are derived from the Behavioral Risk Factor Surveillance System (BRFSS), a telephone survey of Missouri residents.

The Health Department has developed its **Joint Pandemic Status System** that monitors global, national and local conditions for determining which section of the Pandemic Influenza Preparedness Plan for Kansas City, Mo might need to be activated. The JPSS is a simplified replication of the Federal Government Response Stages. The local system is available at www.kcmo.org/health.nsf/web/jpss.

Family Structure and Health

The World Health Organization defines health determinants as the range of personal, social, economic and environmental factors which determine the health status of individuals or populations. The composition of one's family, therefore, must be regarded as a health determinant.

For example, it has been reported that men, but not women, live longer and have better functional health if they are married (*Soc Sci Med* 2004;58:2585-2600). This is because, as other studies have shown, it is the wife who usually takes "control" of the man's medical needs such as scheduling physician appointments and assuring compliance with medications, etc.

Over the last several decades, marked changes have occurred in the family structure in many societies. These changes reflect a variety of factors such as migration, economic fluctuations, and instability. As a result there are many combinations of living situations that constitute family beyond the traditional nuclear family concept of both biological parents and their children.

The changes in family structure vary across countries. For example, in the US and other developed countries, there have been marked declines in nuclear families and rises in single parent families, couples only, and single person households. The increase in "alone" and "couples only" households is synonymous with increases in aging populations, delayed marriage, and declining fertility. Meanwhile, in many developing countries, nuclear families are on the rise at the expense of extended families resulting in more elderly individuals living alone.

There are concerns how these changes in family structures influence the health and well being of individuals and the quality of health outcome in populations. Consequently, a recent study from Japan is of interest (*Health Qual Life Outcomes* 2007;5:61). Japan is similar to the US in the changing demography of family structure, particularly the rise in single person households.

The Japanese study found that the effects of family structure on measures of health-related quality of life and hypertension persist regardless of age, sex, lifestyle risk factors and social support. The existence of concerned and/or caring persons buffered the deleterious influences of living in a small family structure compared to multigen-

erational families and led to improved mental health status.

Multigenerational families in Japan have been shown to provide social support, prestige, greater control and power within the family for women, and an easing of domestic burdens as work can be distributed across more family members.

By the same token, however, there are studies that suggest individuals may do better in smaller family structures where there are less family demands to address. For example, the survival of black women in the US who have end stage renal disease and who live in a complex family structure have double the mortality risk than those living in a simpler family structure (*Soc Sci Med* 1999;48:1333-1340).

As the US baby boomers continue to age, there will be more elderly individuals, particularly women, who wind up living alone. And, while it might be desirable to try to incorporate these persons into multigenerational family structures, this may not prove easy. The US is faced with a growing problem of younger adults having to care for their parents, yet those parents often are unwilling to relinquish their independence to move in with their children. Then there is the issue of whether the children can provide care and support in their homes to parents who suffer from conditions such as Alzheimer's disease and other demanding medical conditions. This evolving situation will give medical anthropologists much to study in the coming years.

The Kansas City Health Department is posting drafts of the various sections of its **Community Health Assessment 2008** report on its website at www.kcmo.org/health under Medical Publications. These drafts are for public review and comment. New sections will be added to the website as they are written. Any draft that was published to the website and then subsequently revised will carry a designation that it was revised and the date of that revision. Information on how to submit comments and suggestions is provided on the website.

Potpourri

CULTURAL BEHAVIORS INFLUENCE the incidence and prevalence of many infectious, parasitic, and non-infectious diseases. That is why public health intervention strategies often are geared at changing behaviors. Therefore, it was not surprising when an Associated Press story (10/19/07) reported that the Rotterdam Natural History Museum was finding it difficult to obtain specimens of the human pubic crab louse, *Phthirus pubis*. The reason seems to be the popularity of the bikini wax known as the Brazilian, which removes all or most pubic hair (*Sex Trans Infect* 2006;82:265-266). If a person does not have pubic hair then the louse has no place to live due to the destruction of its habitat.

THE ADVENT OF springtime means more outdoor leisure time and an increased exposure to blood feeding creatures and, potentially, the diseases they might transmit. In Missouri, the vast majority of vector borne diseases are transmitted by ticks. The best protection against tick-borne diseases are personal protective measures, but which of these behaviors are truly effective? A study of personal protective measures in Connecticut, which is a highly Lyme disease endemic area, found that use of protective clothing was 40% effective while use of tick repellents on skin or clothing was only 20% effective (*Emerg Infect Dis* 2008;14:210-216). Checking one's body for ticks and spraying property with acaricides were not effective.

THE MOST EXTENSIVE study of eating habits of U.S. adults (a telephone survey of 14,000 Americans as part of the Foodborne Disease Active Surveillance Network survey) confirmed conventional wisdom that men eat more meat than women, and women eat more fruits and vegetables.

But the study also found men were much more likely to eat asparagus, brussel sprouts, peas and peanuts, along

with frozen pizzas, frozen hamburgers and frozen Mexican dinners. Women were more likely than men to eat eggs, yogurt and fresh hamburgers.

Men also showed a little more of an appetite for runny eggs and undercooked hamburgers—two foods that carry a higher chance of bacterial contamination, while women were more likely to eat only one risky food, raw alfalfa sprouts, which in the past 15 years have been linked to outbreaks of food poisoning.

CURRENT OUTBREAKS of typhoid (etiology *Salmonella typhi*) in the Philippines highlight the need to routine vaccination of school age populations in various countries as well as vaccination of travelers from developed countries (*N Engl J Med* 2007;357:1069-1071). According to the World Health Organization (WHO) there are 16-33 million cases and 500,000-600,000 deaths from typhoid annually. Since 2000, WHO has recommended vaccination of school-aged children in countries with substantial typhoid problems. Two highly effective and safe vaccines exist for typhoid: a single injection with 3 years of protection, and an 3-4 dose oral preparation with 7 years of protection. Both vaccines have been available for 20 years. Typhoid vaccination is recommended for US travelers to the Indian subcontinent and developing countries in Asia, Africa, the Caribbean, and Central and South America, particularly areas off the usual tourist itineraries.

The Kansas City Health Department will offer its 4-day ***Principles of Epidemiology*** course on June 16-19, 2008. This course is free-of-charge and will be taught at the Health Department. Class size is limited and registrations will be accepted in the order they are received. To register, send an email to:

Gerald_hoff@kcmo.org

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