



Kansas City, Missouri, Health Department,
Office of Epidemiology & Community Health Monitoring



Public Health
Prevent. Promote. Protect.
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Community & Hospital Letter

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Chronic Lower Respiratory Diseases

Chronic lower respiratory diseases (CLRD) are a diverse group of disorders with most involving impairment of lung function. These diseases account for about 5% of all deaths nationally and in 2004, CLRD was the 4th leading cause of death in the United States. The primary consequence of CLRD that contributes to illness is breathlessness. Deaths generally occur among the older age groups, with 86.7% in Kansas City being among persons 65 y of age and older. In 2005, the average age of death from CLRD in Kansas City was 76.9 y.

The Yr 2010 objective for CLRD deaths is 60 per 100,000 population. Kansas City has been below this level for several years, with the 2005 age-adjusted death rate being 50.7. Between 1996-2000 and 2001-2005, the age adjusted death rates due to CLRD decreased for non-Hispanic whites and non-Hispanic blacks, 16% and 10%, respectively. Despite these decreases, non-Hispanic whites were 33% more likely than non-Hispanic blacks to die of CLRD. Males had an age-adjusted death rate of 54.1

compared to a rate of 38.1 for females. Non-Hispanic whites and non-Hispanic blacks accounted for 97.8% of CLRD deaths over the 5 y period. Of the 919 CLRD deaths recorded, 0.4% were attributed to bronchitis, 8.8% to emphysema, 3.6% to asthma, and 87.2% to other lower respiratory tract diseases.

Depending on the severity, breathlessness may result in restrictions ranging from inability to climb stairs to constant breathlessness and difficulty in sleeping. Impaired lung function probably contributes to more frequent, severe, and prolonged viral and bacterial respiratory infections. Conditions such as chronic obstructive pulmonary disease (COPD) are largely irreversible and progressive and occur among older individuals who often have multiple chronic diseases that contribute to the overall disability. After an average of 7.5 years, most COPD patients are no longer capable of productive work. Often, COPD patients receive medical care that is not appropriate for their condition.

Basic Math & Stats Course

The Office of Epidemiology & Community Health Monitoring will be offering its 2-day course on basic mathematics and statistics on

Wednesday and Thursday

July 25th & 26th

This course will cover a review of elementary arithmetic measures used in epidemiology, discuss rates including adjusted rates, measures of central tendency, measures of risk, Chi square tests, t-tests and z-tests. The course will include a variety of exercises to assist the participant in understanding the use of these measures and their calculation.

Space is limited so be sure to register early. To register send an e-mail to

Gerald.Hoff@kcmo.org

Community & Hospital Letter

Exposure to ozone and particulate matter with an aerodynamic diameter of $\leq 10 \mu\text{m}$ (PM_{10}) is associated with respiratory hospital admissions including CLRD. In Kansas City in 2003, CLRD was responsible for 1,930 visits to emergency departments and 1,094 hospitalizations.

Of the disorders included under CLRD, COPD is considered a major and increasing global health epidemic (*PLoS Med* 2007;4:e112). It is defined as “a preventable and treatable condition...characterized by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lung to noxious particles or gases” (Global Initiative for Chronic Obstructive Lung Disease, www.goldcopd.org). This progressive and relentless loss of lung function is caused by emphysema due to destruction of lung tissue and by narrowing of small airways as a result of chronic inflammation and loss of elastic recoil. This results in progressive airflow limitation, air trapping, and progressive shortness of breath on exer-

tion.

The Global Burden of Disease studies rank COPD as the 6th commonest cause of death worldwide and predict it to become the 3rd most common cause by 2020 (*Eur Respir J* 2006;27:397-412). In the US, COPD is the only common cause of death that has increased over the last 40 years. COPD is an increasing cause of chronic disability and is predicted to become the 5th most common cause worldwide by 2020.

Nearly 90% of cases of COPD are intimately linked to smoking. It is estimated that >25% of smokers, male and female, may develop COPD (*Thorax* 2006;61:935-939). Of the non-smoking cases, a significant proportion are related to inhalation of biomass fuels in confined spaces by women in developing countries. Existing therapies for COPD are inadequate and none have been shown to slow the relentless progression of the disease.

Potpouri

THE ANNUAL INCIDENCE of the mosquito-transmitted viral disease dengue fever (DEN) and its manifestation known as dengue hemorrhagic fever have increased dramatically around the world in recent decades. The major disease burden occurs in Southeast Asia, the Americas, and the western Pacific. Over 100 tropical and non-tropical countries have endemic DEN.

DEN was eradicated from the southern United States in 1945 and subsequently from most of the western hemisphere. All four DEN virus strains, however, have been able to reestablish themselves as country after country reduced or stopped control efforts for the *Aedes aegypti* mosquito, the vector of DEN. This species is largely restricted to southern and southwestern states and since 1981, locally acquired cases of DEN have been occurring in southern Texas (*Emerg Infect Dis* 2003;9:86-89).

In 2005 and 2006, the US recorded 207 cases of DEN virus infection, mostly in travelers returning from countries where the disease is more common. Three cases of DEN were reported in Missouri residents in 2006, two from the Kansas City area and one from the St Louis area.

Fever is not uncommon in returning travellers (*Clin Infect Dis* 2007;44:1560-1568) and, according to some studies, DEN is the second most frequent cause of those fevers (*J Infect Dis* 2007;195:1089-1096). As there is no vaccine for DEN, it is important that 1) travellers to countries where DEN is endemic are counselled regarding mosquito protection/avoidance, and 2) that returning travellers who present with fever are assessed for both malaria and DEN.

HOW DO YOU dispose of unused or unwanted medications? Do you simply flush them down the toilet? In February, the Food and Drug Administration (FDA) issued guidelines that recommend against flushing of most medications. Many drugs, including estrogens and antibiotics, are not effectively removed during waste treatment and have been found in discharge waters. These compounds then can contribute to health problems among animals and the promotion of antibiotic resistance in bacteria.

There are a few medications that the FDA still encourages flushing for disposal. Most are narcotics that usually contain high doses of painkillers. These medications are Actiq, the Daytrana Transdermal Patch, Duragesic Transdermal System, OxyContin tablets, Avinza capsules, Baraclude tablets, Reyataz capsules, Tequin tablets, Zerit used for oral solutions, Meperidine HCl tablets, Percocet, Xyrem and Fentora (*Jefferson City News Tribune* 6/25/07).

So what do you do with everything else, simply put it in the trash. It is suggested that liquids be poured over existing trash while pills be placed in zip lock type plastic bags or other containers and mixed with something undesirable. It is also recommended that labels be removed from prescription bottles and vials prior to disposal.

VETERINARIANS WHO WORK with birds are at increased risk of infection with avian influenza viruses. US veterinarians who have occupational exposure to live chickens, ducks, turkeys, geese, or quail, have a higher risk of infection with avian H5, H6, and H7 influenza viruses than other veterinarians (*Clin Infect Dis* 2007;45:4-9). The presence of antibodies to these viruses most likely was the result of exposure to low pathogenic strains of avian influenza. Therefore, a case could be made for veterinarians with avian exposures being given priority access to vaccines and antiviral drugs in pandemic planning. Yet, the experience of poultry workers and veterinarians working to control the H5N1 avian influenza virus has been minimal infection rates (*ProMED* 6/5/07).

Avian influenza virus infections in humans can range from asymptomatic to mild conjunctivitis to fulminant pneumonia and death (*Critical Care* 2007;11(2):209 epub ahead of print). With these cases the risk for genetic change and development of a novel recombinant virus increases.

WHILE BREAST CANCER is far more common in women than men, men may be more likely to die from early-stage breast tumors (*Cancer* 2007;109:141-147). Male breast cancer survival rates have not improved during the past 30 years. Among men whose breast cancer had not spread to the lymph nodes, the typical survival time was 6 years compared with nearly 15 years among

women. There were no differences between males and females in survival with more-advanced breast cancer. In general, men have lower rates of both chemotherapy and radiation than women, but they were as likely to receive hormone therapy. There is speculation, however, that male breast cancer tumors do not respond as favorably to hormonal treatment as female breast cancer tumors.

WALKING AND TALKING on a cellphone can be dangerous to your health, according to a study conducted by Ohio State University (*New Scientist* 6/2/07 p 19). In that study, 48% of cellphone users crossed the road in front of approaching cars—causing some drivers to make emergency stops—compared with 25% of persons not using a cellphone. It should be noted that just 16% of iPod users took the same risk, probably because they were aware they could not hear oncoming traffic.

WEST NILE VIRUS (WNV) activity is quickly picking up around the US and human cases of the disease have been reported from at least nine states, as of this writing. Over the past four years, nearly 19,700 clinically apparent human cases of infection with WNV have been documented by the Centers for Disease Control and Prevention. While the majority of infected individuals survived, this did not mean they made full recovery (*Clin Infect Dis* 2007;44:1617-1624). Patients, even those with apparently mild cases of acute disease, frequently have subjective, somatic complaints following WNV infection. Persistent movement disorders, cognitive complaints, and func-

Measuring Health Disparities Course

The Office of Epidemiology & Community Health Monitoring will be offering its half day course on techniques used to measure health disparities on

Friday, October 5th

8:00 AM—1:00 PM

The course is free of charge and space is limited so be sure to register early. To register send an e-mail to

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tional disability may occur after West Nile neuroinvasive disease. West Nile poliomyelitis may result in limb weakness and ongoing morbidity that is likely to be long term.

PETTING ZOOS ARE often part of temporary events and allow the public to interact with animals. They also can serve as the source for various infectious diseases acquired by the patrons. But how those human-animal interactions occur is largely unregulated.

A survey of petting zoos conducted by University of Guelph, found that patrons were allowed to bring into the animal contact areas the following items: baby bottles (50% of venues), pacifiers (71% of venues), spill-proof cups (56% of venues), and infant toys (65% of venues) (*Clin Infect Dis* 2007;45:10-15). All of these items could come into subsequent contact with the mouths of infants and children. Hand washing facilities were provided at 94% of the venues, but actual hand washing by patrons varied from 0% to 77%. Increased hand washing occurred when the wash station was on an exit route from the contact area and when there were hand washing reminder signs.

ARE THERE ANY health benefits to being obese? The medical literature would suggest not. Yet, a study from Hong Kong has reported that elderly people who are obese appear to have a lower risk of developing tuberculosis than those who are underweight or of average weight (*Arch Intern Med* 2007;167:1297-1304). Those who were underweight were 6 times more likely to develop tuberculosis than those who were obese, while those who were of average weight were 3 times more likely.

It has long been known that there was a relationship between tuberculosis and a person's weight. Prior to antibiotics, tuberculosis sanatoriums often reported success when patients were put on a diet that increased their body weight (*Bargaining for Life: a social history of tuberculosis, 1876-1938*. University of Pennsylvania Press, 1992).

MAJOR DISCREPANCY RATES between preterm clinical diagnoses and postmortem autopsy findings have been recognized for decades. Yet, there was limited data regarding cancer patients who die in an oncologic intensive care unit.

A study from the Memorial Sloan-Kettering Cancer Center reported that 26% of such patients who died had major missed diagnoses (*Critical Care* 2007;11:R48 epub ahead of print). Of those patients, 54% had Class 1 discrepancies, 32% had Class 2 discrepancies, and 14% had both Class 1 and Class 2 discrepancies. A Class 1 discrepancy was defined as a missed major diagnosis that, had it been made, would have changed management and might have resulted in prolonged survival. A Class 2 discrepancy was a missed major diagnosis with no impact on treatment and survival either because the patient already was receiving appropriate therapy even though the diagnosis was not known or effective therapy was not available at the time. Class 1 discrepancies were due to opportunistic infections (67%) and cardiac complications (33%), while Class 2 discrepancies were due to cardiopulmonary complications (70%) and opportunistic infections (30%).

BIRTHS TO GIRLS 10-14 y of age have been declining nationally, achieving a historic low of 0.7 per 1,000 girls 10-14 y old in 2002 and remaining stable through 2005. This occurred across all racial and ethnic groups. In Kansas City, the birth rate among girls 10-14 y old declined 52% from 1990 to 2005. In 2005, there were 23 births to girls 10-14 y old out of 7,573 live births, with birth rates of 2.2 for non-Hispanic black girls and 0.1 for non-Hispanic white girls. In general, 10-14 year old mothers are least likely to receive timely prenatal care compared to mothers in older age groups. Compared with mothers 20-39 y old, infants born to mothers 10-14 y of age experience almost twice the rates of preterm birth and low birth-weight. The infant mortality rate is 2 to 3 times higher than that for infants of mothers 20-44 y of age. These young mothers also are more likely to suffer hypertension and eclampsia, a serious condition marked by convulsions and seizures.

Healthy People, Healthy Communities

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