

SPEAKER'S CORNER.....

Understanding the basic concepts of public health surveillance

Public health surveillance has been defined as the ongoing collection, analysis, and interpretation of health data essential to public health practice, closely integrated with timely dissemination of information for intervention. This is analogous to a 24 hour surveillance camera (data collection) under the watchful eyes of guards (data analysis and interpretation) who have telephone access (information dissemination) to the police and firefighters (intervention).

Two unique characteristics differentiate a surveillance system from other data systems, such as surveys, routine records, or research databases: surveillance is ongoing and linked to intervention. A smoke detector switched off intermittently offers unreliable protection. A sensor connected with a lamp provides automatic light when the night falls.

There are many uses of a public health surveillance system. It may monitor current status, just like a fridge thermometer, a bathroom scale, a mirror, or a photograph. It may document trend, similar to a videotape or a photo album. While a snapshot shows the status, a photo album shows the trend (changes over time). It may provide early warning, like a carbon monoxide detector. It may stimulate research, like a leaking roof. Detection devices, such as a smoke detector or a light sensor, collect data, but will not serve the intervention purpose unless they are linked respectively with a water sprinkler or a lamp. Finally, a surveillance system may evaluate interventions. This compares with a thermostat regulating a heating/cooling unit. When the thermostat detects excess heat, it turns on the cooling unit; on detecting excess cold air, it starts the heating unit.

Current use of surveillance data varies, and may be as rigid as a computer password, as specific as a cookbook, as general as

manufacturer's recommendations, or as directional as a compass. Health surveillance systems still lack two features that characterise economic surveillance systems—the economic market index, and automated stock trading. An overall health index, based on composite indices, such as heart health, nutrition or health care utilisation indices, can be used to compare health trends over time and across jurisdictions. If major changes in the overall health index are detected, its composite indices can be examined to identify problems. In addition, warning levels and action levels should be established for public health decisions, as in automated stock trading.

Recently, surveillance systems have moved from the back pages to the front headlines. It is time for supportive health policy to reinforce surveillance as a frontline in public health.

B C K Choi

Population and Public Health Branch, Health Canada, AL no 1918C3, Tunney's Pasture, Ottawa, Ontario K1A 0K9, Canada; Department of Public Health Sciences, University of Toronto; Department of Epidemiology and Community Medicine, University of Ottawa, Canada

A W P Pak

Traffic Injury Research Foundation of Canada, Ottawa, Ontario, Canada

J M Ottosen

Applied Research Center, Andrew Young School of Policy Studies, Georgia State University, Atlanta, GA, USA

Correspondence to: Dr B C K Choi; Bernard_Choi@hc-sc.gc.ca

ECHO.....



Please visit the Journal of Epidemiology and Community Health website [www.jech.com] for link to this full article.

Heart disease maintains its grip

Heart disease remains a threat to British men, according to a study by Lampe *et al*, based on the data set of the British Regional Heart Study. Deaths from coronary heart disease (CHD) are falling in the developed world because of a drop in new major cardiac events and a decline in cases in which CHD causes death. Whether these trends have affected the prevalence of CHD in the population was previously unknown.

Lampe *et al* looked at time trends for two measures of prevalence of CHD—current symptoms of angina and history of medically diagnosed CHD—from questionnaire data collected at entry to the study (1978–80) and at three intervals up until 1996. These they compared with trends in new major CHD events—deaths from CHD, non-fatal myocardial infarction, all major CHD events, and first major CHD event—and case fatality during 15 years' follow up from baseline for each man.

During 1978–96 the prevalence of current symptoms of angina fell (overall age adjusted annual percentage change in odds (−1.8% (95% confidence interval −2.8% to −0.8%), $p < 0.001$) whereas that of history of diagnosed CHD was unchanged (0.1% (−1.0% to 1.2%), $p = 0.83$). The trends in rates of new major CHD events all showed a decline, as did case fatality.

Despite all the other trends the unchanged prevalence of diagnosed CHD in these men is a key finding and means that secondary preventive measures for CHD remain crucial.

▲ *Heart* 2001;86:499–505.