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CAUSAL THINKING AND CAUSAL LANGUAGE IN EPIDEMIOLOGY: IT’S IN THE DETAILS. *R Lipton, and T Odegaard (Prevention Research Center, Berkeley, CA 94704, USA)

Although epidemiology is necessarily involved with elucidating causal processes, we argue that there is little practical need, having described an epidemiological result, to then explicitly label it as causal (or not). Doing so is a convention which obscures the valuable core work of epidemiology as an important constituent of public health practice. We discuss another approach which emphasizes the public health “use value” of research findings in regard to prediction and intervention independent from explicit metaphysical causal claims. Examples are drawn from smoking and lung cancer, with particular focus on the original 1964 Surgeon General’s report on smoking and the new version released in 2004. The intent is to help the epidemiologist focus on the pertinent implications of research, which, from a public health point of view, in large part entails the ability to predict and to intervene. Further discussion will center on the importance of differentiating between technical/practical uses of causal language, as might be used in structural equations or marginal structural modeling, and more foundational notions of cause. We show that statistical/epidemiological results, such as “smoking two packs a day increases risk of lung cancer by 10 times” are in themselves a kind of causal argument that are not in need of additional support from relatively ambiguous language such as “smoking causes lung cancer.” We will show that the confusion stemming from the use of the latter statement is more than mere semantics. Our goal is to allow researchers to feel more confident in the power of their research to tell a convincing story without resorting to metaphysical/unsupported notions of cause.

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THE PATTERNS OF HEPATITIS A EPIDEMIOLOGY IN MANITOBA 1992–2003: IMPLICATIONS FOR VACCINATION STRATEGIES. *H X Wu, G Smart, J Wu, A Giulivi, Z Hong, M Dawood (BSSHCI Division, Public Health Agency of Canada, Ottawa, Canada)

Objectives: The objective of this study is to examine annual trends in the incidence of hepatitis A virus (HAV) infection, and to evaluate the impact of the preventive measures adopted by Manitoba Health in the last decade through the use of Manitoba Provincial laboratory database. Methods: Data were extracted from the database on population-based laboratory tests for detecting IgM anti-HAV antibody in serum, conducted during 1992–2003 in Manitoba. Results: Of 1214 serologically confirmed cases, 534 patients (44%) were shown to be Manitoba’s aboriginal population. The annual incidence of hepatitis A per 100,000 population decreased significantly during the study period, from 8 in 1992, to 3 in 2003 (p < 0.01). During 1992–1997, incidence per 100,000 population was highest among children aged less than 10 years, ranging from 29.2 in 1992 to 91.3 in 1994. After adjustment, the incidence rate in the northern part of Manitoba was significantly higher than that in the Southern part (p < 0.001, RR, 1.63, 95% CI, 1.10–2.51). Conclusions: The differences in incidence rates by age group and health district suggest that vaccination policies may need to be tailored to regional epidemiology. In conjunction with the timely incidence data, sero-surveillance data and risk factor data are essential for informed HAV vaccination and control policies.

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ENHANCED SURVEILLANCE OF HEPATITIS B IN CANADA, 1999–2004: IMPLICATION FOR IMMUNIZATION POLICY. *J Wu, H X Wu, A Andonov, A Giulivi (BSSHCI Division, Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, Ottawa, Canada)

Objectives: We aimed to describe the current HBV incidence and patterns of transmission in Canada, as well as discussing implications for the control of HBV through immunization. Method: We analyzed acute hepatitis B cases reported to the Enhanced Hepatitis Strain Surveillance System during the period 1999–2004 from 7 health sentinel Regions in Canada. Results: The incidence of acute hepatitis B per 100,000 population significantly declined, from 2.05 in 1999 to 0.93 in 2004 (p < 0.001; RR, 0.85; 95% CI, 0.80–0.90). Rates of disease were averaged to be 2.8 times (95% CI, 2.28–3.46) higher among males than among females. The greatest decline occurred among individuals 30–39 years old (75.0%), followed by those 10–19 years old (72.3%) and 20–29 years old (63.8%) (P < 0.001 for each age group). During 1999–2004, the most commonly reported risk factor for infection was high-risk sexual activity (22%) followed by IDU (17%) and MSM activity (13%). Conclusion: The decline of the incidence observed can be attributable to predonation blood screening, promotion of safer sex, and implementation of vaccination. Endemic transmission may be further reduced by improving immunization coverage among certain high-risk groups (IDU, MSM, high-risk sexual activity). This continued strategy will dramatically limit the number of acute infections.

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IMPLEMENTATION OF A COMMUNITY PARTICIPATION PROJECT FOR DENGUE PREVENTION IN PUERTO RICO. *A Ayala, C L Prez, J G Rigau, G G Clark, R Barrera, Dengue Branch (Centers for Disease Control and Prevention, San Juan, Puerto Rico)

Purpose: Dengue is a mosquito-borne viral disease of the tropics and Aedes aegypti is the most important vector worldwide. In the absence of a vaccine, dengue prevention efforts emphasize control of the mosquito. The limited efficacy of current control programs, often emphasizing insecticides, has prompted the search for alternative methods to prevent dengue involving community participation. The goal of this project is to develop a novel approach to community participation by developing a model that involves the active participation of community residents in the planning and conduction of activities to reduce Ae. aegypti infestations. Methods: Initial steps in project development included identification of intervention and control communities with similar community environment and organizational level capable of supporting a community participation project, entomologic inspections of 20% of the houses (comparable baseline Breteau Index ≥ 50 was required), and determination of community characteristics. To promote community participation we also required a community inventory, partnership identification, and in-depth and informal interviews with gatekeepers and community leaders in the intervention community to determine project viability. Results: We evaluated communities in 22 of the 78 municipalities of Puerto Rico. Thirteen communities were selected for further evaluation. From these, two communities (2000 houses in each) with similar organizational level and comparable larval indices (house index 67.5% and 75%, respectively; p-value = 0.46) were chosen. Three informal and 7 in-depth interviews were conducted during December 2003. Content analysis of these interviews indicated that interviewees viewed dengue as a disease of interest but only when there were cases in the community. Correct dengue knowledge was mixed with misconceptions and the community had a well-organized health committee. Conclusion: We identified incorrect knowledge and non-sustained interest in dengue preventive behavior and our model will address these issues in the intervention community.