Asleep at the Switch: Local Public Health and Chronic Disease

Local health departments generally do a good job of monitoring and controlling conditions that killed people in the United States 100 years ago. Yet noncommunicable diseases, which accounted for less than 20% of US deaths in 1900,[1] now account for about 80% of deaths.[2] Our local public health infrastructure has not kept pace with this transition.

Health departments must continue to handle traditional public health priorities as well as emerging infectious diseases. They must also increasingly address terrorism detection, preparedness, and response. But it is even more urgent that they adjust to the epidemiological transition from communicable to chronic disease. All too many are asleep at the switch.

There are many reasons for the relative lack of local public health activity in chronic disease prevention and control. For the public, the fact that there is no urgent crisis with a short-term solution is key. For public health, the foremost reason may be the assumption that chronic diseases are not meaningfully amenable to public health action and that traditional public health strategies are not relevant to chronic diseases. In fact, these strategies hold enormous promise.

TRADITIONAL PUBLIC HEALTH STRATEGIES CAN HELP CONTROL CHRONIC DISEASE

Traditional public health activities include (1) surveillance, including mandatory reporting; (2) environmental modifications, such as those used to control water- and mosquito-borne illnesses; (3) regulation; (4) clinical care, including direct provision of care and monitoring of care given by others; (5) outbreak detection, investigation, and control; (6) case management and contact tracing; (7) immunization; and (8) health education.

Surveillance

Surveillance is essential in monitoring and controlling disease; the lack of robust local systems for chronic disease surveillance is a critical deterrent to progress.[3] Local systems could delineate and galvanize local action on the epidemics of obesity and diabetes; the health care system's failure to effectively treat most cardiovascular disease and diabetes; and the minimal levels of pharmacological and counseling help provided to the majority of smokers who want to quit.

State cancer registries now conduct surveillance for incidence and treatment as well as for deaths. These registries have potentially significant implications for prevention; they include all patients diagnosed and can bridge the gap between surveillance and clinical care, tracking stage at diagnosis and treatment effectiveness communitywide. Los Angeles County began a local telephone survey in 1997 and has found it to be an effective planning tool.[4] New York City has conducted local telephone surveys since 2002, generating information on smoking, mental illness, alcohol use, diabetes, obesity, and more (http://www.nyc.gov/html/doh/html/data/data.html) and leading to the establishment of neighborhood health department offices in the city's sickest communities.

New York City is also conducting a health and nutrition examination survey modeled after the National Health and Nutrition Examination Survey (NHANES; http://www.nyc.gov/health/nychanes). This may be the first community survey of its kind in the United States, and it will provide definitive information on the local prevalence and level of control of hypertension, diabetes, hypercholesterolemia, depression, and other health conditions. The Centers for Disease Control and Prevention's (CDC's) recently released Selected Metropolitan/Micropolitan Area Risk Trends (SMART) system provides some information for local action (http://apps.nccd.cdc.gov/brfss-smart/index.asp). Medical informatics also holds promise. In theory, a local health officer could and should know how many people locally have high blood pressure, high cholesterol, and diabetes; how many of them are adequately controlling their condition; and which patient and provider characteristics are associated with poor control.

Disease registries (analogous to those used to track treatment, progress, and outcomes of patients with tuberculosis) have enormous potential to improve chronic disease management. Facilities with registries improve management of patients with diabetes, follow-up of people with abnormal screening tests for cancer, and more. These results could be aggregated and analyzed on a population basis or tracked individually if electronic medical records were used.

Environmental Interventions

Changes in housing, water, and the physical environment were essential to controlling infectious disease. Today, modifications of the physical environment to promote physical activity, or of the food environment to address obesity, are essential for chronic disease prevention and control.

Regulation

Modern public health practice started with regulation of food and water. Potential roles for local regulation in chronic disease control include establishment of smoke-free workplaces; local requirements on food pricing, advertising, content, and labeling; regulations to facilitate physical activity, including point-of-service reminders at elevators and safe, accessible stairwells; tobacco and alcohol taxation and advertising and sales restrictions; and regulations to ensure a minimal level of clinical preventive services.

Clinical Care

Traditional public health has moved increasingly from direct provision of clinical care to assurance of care. Similarly, for chronic disease prevention and control, direct provision of care (e.g., smoking cessation clinics, smoking cessation medication distribution programs, and cancer screening) can have strategic importance but will be secondary to broader health care quality issues. Secondary prevention of complications of many chronic diseases (e.g., hypertension, hyperlipidemia, and diabetes) can be achieved with currently available medical interventions; however, most patients with high blood pressure, high cholesterol, and diabetes do not have these conditions adequately controlled.[5–7] Health departments must promote and monitor treatment standards in the local health care system.

Outbreak Detection, Investigation, and Control

Outbreaks of noncommunicable disease are slower, larger, and more complex than outbreaks of communicable disease—but they are still outbreaks. Traditional outbreak control methods—case definition, risk factor analysis, and risk factor control—are relevant and are underused for conditions such as diabetes, obesity, and death from cervical cancer.

Case Management and Contact Tracing

Case management of noncommunicable disease does not have the same societal imperative (prevention of transmission) that case management for infectious disease does. But improved prevention and management of chronic disease also has societal benefits, including reductions in health care costs and increases in productivity. Disease management approaches improve outcomes for people with diabetes, asthma, and other chronic conditions. Contacts of individuals with chronic disease are not generally at risk of contracting the disease directly, but they may be at risk because of shared genetic or environmental factors. Family members of people with colon cancer, breast cancer, and diabetes are at higher risk for these conditions and may benefit from outreach and preventive interventions; the clinical medical system is limited in its capacity to ensure this type of contact tracing and follow-up.

Immunization

While we do not yet have vaccines against most chronic diseases, influenza vaccination is associated with reductions in cardiovascular mortality.[8] Hepatitis B vaccination will reduce liver disease and hepatoma. Human papilloma virus vaccines are promising candidates for prevention of cervical cancer. Effective education can "immunize" young adults against tobacco dependency and tobacco company marketing,[9] an approach that could also prevent other chronic diseases.

Health Education

Local health departments can fulfill a unique role as an honest broker and policy setter by providing unbiased information to legislators, policymakers, and the public. The cacophony of recommendations on personal health topics such as exercise, diet, and depression is reminiscent of the large number of scientifically unfounded recommendations on communicable disease prevention and control that circulated in the late 1800s. This is at least in part a reflection of the failure of federal, state, and local agencies to address these issues clearly, convincingly, and consistently.

MORE FUNDING NEEDED FOR CHRONIC DISEASE CONTROL

There is a misperception that public health is synonymous with infectious disease control. In fact, public health activities have long encompassed noncommunicable disease prevention programs, such as motor vehicle and workplace safety, maternal and infant health, lead poisoning prevention, water fluoridation, and tobacco control. Just as decades ago public health prevented disease by improving air and food safety, today we must address pathogenic tobacco advertising strategies and toxic food policies. As shown by the reduction in tobacco use and in cardiovascular mortality, success in chronic disease prevention and control is possible.[10,11] But success is not assured, and it is unlikely to be achieved without a substantial increase in funding.

In 2001, the New York City Department of Health and Mental Hygiene received no federal government and minimal state government grant support for prevention and control of cardiovascular disease, diabetes and cancer, and less than 10 cents per capita for tobacco control. It also spent less than 1.5% of its city funds on monitoring and control of these conditions. And although the amount of federal funding received for infectious disease control was far from sufficient, it was more than 100 times the amount received for chronic disease and tobacco control (about $10 per capita). "Steps to a Healthier US" (http://www.healthierus.gov/steps) federal grants are funding surveillance and chronic disease control in some local health departments for the first time. Funding for local public health programs is inversely proportional to the risk of death from the very conditions these programs address.

Chronic disease will not be controlled in weeks or months. This is all the more reason to begin control programs now. There is an urgent need for both structural interventions that change the context for health (e.g., smoke-free workplaces; increased taxes on tobacco and alcohol; sidewalks and parks to promote increased physical activity) and improved clinical management (e.g., preventing cardiovascular disease complications through improved treatment of diabetes, high cholesterol, and hypertension; preventing or detecting cancer; and supporting smoking cessation). The costs of chronic disease–related care are increasing rapidly, and all of society has both an interest in and a responsibility for improving the prevention and control of such

diseases. The federal government must greatly increase its support for local activities in these areas. It is time for state and local health departments to wake up to the challenge. ■

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Acknowledgments

The author thanks Colin McCord, Richard Garfield, Mary Bassett, Lynn Silver, and Christina Chang for valuable suggestions and insight, and Drew Blakeman for assistance with manuscript preparation.

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