Epidemiology for Identifying Community Problems

John B. Waller Jr.
Infant mortality is a national problem. The 1977 baseline for infant mortality was 14.1 deaths per 1,000 live births, and the 1985 infant mortality rate was 10.6. Based on these data, the 1990 goal for infant mortality was set at 9 deaths per 1,000 live births. A major gap still exists between white and black infant mortality rates. This gap has stayed the same for the last five to six years, and although both white and black infant mortality rates have declined since 1977, they are declining much slower now than in the past.

In 1985 the five leading causes of death for infants nationally were 1) congenital anomalies and/or birth defects, 2) respiratory distress syndrome, 3) the sudden infant death syndrome (SIDS), 4) disorders due to low birth weight, and 5) newborn diseases. For Detroit, SIDS was ranked first, followed by low birth weight disorders, congenital anomalies, respiratory distress syndrome, and newborn diseases.

With the national infant mortality rate being 10.6 and Detroit's rate being 22.4 per 1,000 live births, we still have a major problem with infant mortality. Part of this problem is a lack of community-based programs to get women into prenatal care early in the first trimester of pregnancy. We must find those women and get them into prenatal care. We must constantly look at access, availability, and perceived as well as imagined barriers to care. However unfounded, both perceived and imagined barriers are strong factors in keeping people away from needed health services.

We also need community-based drug education programs to reduce the number of babies who are born drug-addicted. The crack cocaine epidemic is increasing infant mortality in the cities of Detroit and Washington and many others, and we must do something about this problem. Another rapidly growing problem that must be dealt with is care for children with the acquired immunodeficiency syndrome.

Based on a 1977 baseline rate of 42 deaths per 100,000 and a 1985 rate of 35 deaths per 100,000, the national health promotion goal for 1990 for children aged 1 to 14 years was 34 deaths per 100,000. From 1950 to 1985 the national death rate for this age group decreased from 87.7 to 34.8 per 100,000, a tremendous reduction of 60.3%. However, the 1985 death rate for children in Detroit was 44.6 per 100,000, again a much higher rate than the national average. The gap between the races in Detroit was also significant: 48.8 deaths per 100,000 for black children versus 37.9 deaths per 100,000 for white children.

Incidence rates for the leading causes of childhood deaths for 1950, 1979, and 1985 have fallen. For instance, birth defects claimed 396 lives per 100,000 births in 1950 but claimed 255.4 lives in 1979 and 236.7 per 100,000 in 1985. Regardless of this improvement, the homicide rate has increased significantly. Homicide did not even rank in the top ten causes of death in 1950, but by 1985 it was the fourth leading cause of death nationally and the second leading cause of death in Detroit for this age group. Homicide surpasses both cancer and congenital anomalies in accounting for deaths of children aged 1 to 14 years in Detroit.

These data stress the need for community-based violence prevention programs. However, we must be sure that such programs taught in schools are done well and readily understood by our children. We need to find ways to teach children alternative nonviolent lifestyles as well as conflict resolution skills, and we need to talk about and practice responsible gun ownership in our homes.

One prerequisite for violence prevention programs is community organization for health promotion. Health promotion involves two factors: individual responsibility, and societal responsibility. We need to go into communities as facilitators and begin to share information so that these communities become empowered to make decisions on their own. We do not yet have a model program for how to accomplish violence prevention, but we are trying to discover a process by which people can learn to develop a healthy self-esteem and such vital skills as resolving conflicts without violence and how to begin to dream again about how to make life better.
The national goal for health promotion for adolescents and young adults aged 15 to 24 years was 93 deaths per 100,000 by 1990, based on a 1977 rate of 115 deaths per 100,000 and a 1985 rate of 95 deaths per 100,000. In 1984, the 15- to 24-year age group accounted for 17% of our nation’s population. Detroit’s 1984 overall death rate for this age group was 142 per 100,000. It was 165 per 100,000 for blacks compared to 81.3 per 100,000 for whites. The leading cause of death for this age group nationally is the category of unintentional injuries, or accidents and adverse effects. This category is number one by a large margin and accounts for just over 50% of all young people’s deaths. Of all accidental deaths that occur to this age group, 74% of them are from motor vehicle crashes. Many of these motor vehicle crashes occur in association with alcohol use and abuse. The second leading cause of death nationally is homicide, and the gap between the races in this category is striking. Detroit’s 1984 death rate for this age group showed two significant changes in the ranking of causes of death: homicide was the leading cause of death, whereas nationally accidents and adverse effects quadrupled the homicide rate; and heart diseases and cancer ranked fourth and fifth, respectively, the reverse of the national rankings.

These data stress the need for community-based injury control programs, especially those that intervene on intentional injury such as homicide, child abuse, and domestic violence. The national goal for health promotion for adults aged 25 to 64 years was 400 deaths per 100,000 by 1990. These figures are based on a 1977 baseline rate of 533 deaths per 100,000 and a 1985 rate of 444 deaths per 100,000. This age group accounted for almost 50% of our nation’s population in 1985. The 1985 national death rate for this age group was 444 per 100,000, whereas in Detroit it was 803.8 per 100,000 for blacks and 809.6 per 100,000 for whites. These figures are almost double the national rate. Nationally, the death rates for this age group have been declining except in cases of cancer. Of the five leading causes of death in 1979, chronic liver disease and sclerosis of the liver slipped to the sixth position by 1985, being replaced by chronic obstructive pulmonary disease.

The 1984 Detroit data for this age group differs significantly in terms of the five leading causes of death. Homicide did not rank in the top five causes of death nationally but was ranked as the third leading cause of death for this age group in Detroit. For black males aged 15 to 45 years, homicide is the number one killer in our country.

The five leading causes of death for older adults are heart disease, cancer, stroke, chronic obstructive pulmonary diseases, and pneumonia/influenza. Mortality due to heart disease and stroke, two of the three leading causes of older adult deaths, has dropped sharply since 1950. Heart disease, for instance, claimed 2,861.9 lives per 100,000 in 1950. In 1985, this figure dropped to 2,187.8—nearly 25%. Even more dramatic, the incidence of stroke dropped 50%, from 923.9 deaths per 100,000 in 1950 to 461.2 in 1985. Between 1950 and 1985 there was an overall 18% drop in the age-adjusted mortality rate for older adults. Much of the decrease is a result of this decline in death rates for heart disease and stroke.

With the national infant mortality rate being 10.6 and Detroit’s rate being 22.4 per 1,000 live births, we still have a major problem with infant mortality. Part of this problem is a lack of community-based programs to get women into prenatal care early in the first trimester of pregnancy.

What is upon us now is a set of diseases with etiologies based in behavior. We must initiate community-based programs that stress prevention of these behavioral diseases. Lung cancer, cirrhosis of the liver, and homicide are all behavioral diseases. We cannot cure them, but we can treat their outcomes. We must initiate, enlarge, and expand our community-based services and research so we can learn how to change the behavior of large groups at a time. We simply do not have enough money in our health care system to treat each individual who has a behavioral etiology that presents itself in disease.

Community-based operations mean the community doing things with the community. Many people talk about community-wide programs, but the emphasis of these programs is doing things to the community, not with the community.

We must identify our mission objectives. If the mission is to protect market share or to go into a particular community to satisfy some training requirement or relationship with the hospital, that is a community-wide program doing things to the community. If the mission is to go into the community as facilitators to provide direction and support for community skills development so that community members can identify their own problems, that is a community-based program doing things with the community.

We often define issues from our own perspective. When we go into a community and talk about infant mortality and complications of diabetes—good programs for the community—we must give community members the information that will help them to understand the problem and find the solution for themselves. Only in this way will they not be a part of the problem but a part of the solution.