

5. Monitoring and evaluation, with further assistance from CFNI staff in the solution to problems arising during implementation and institutionalization of the system.
6. Discussion with national officials to establish a multisectoral food and nutrition surveillance system for the country.

Following the approach outlined above, 11 countries are at different stages of implementing the new system for monitoring and improving nutritional status of children. As the project pro-

gresses, it is being formally evaluated in the hope that this evaluation can guide institutionalization of the system. Work is also in progress to systematize data collection, collation, and analysis of food availability by other sectors, for example, agriculture (food production), industry, and commerce (food imports and distribution). Attempts are also being made to integrate at the national level information from various sources so that a comprehensive food and nutrition surveillance system that provides adequate information to policy makers and senior officials can be established.



The Value of Nutrition Surveillance: A Case Study from the United States¹

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The nutrition surveillance activities conducted by the Centers for Disease Control (CDC) are part of a broad range of nutrition-monitoring activities in the United States. These activities include surveys of food consumption patterns, the Food and Drug Administration's surveys of food purchase patterns, and the National Center for Health Statistics' (NCHS) surveys of nutritional status and dietary intake in a representative sample of the U.S. population. CDC's nutrition surveillance activities are unique in that they relate not to the general population

but rather to low-income populations served by public health clinics. The surveillance data are collected voluntarily by participating state health departments. CDC provides technical assistance to states but offers only limited funding support.

CDC NUTRITION SURVEILLANCE SYSTEMS

CDC operates two nutrition surveillance systems. The Pediatric Nutrition Surveillance System monitors the nutritional status of more than two million infants and children per year in 38 state health departments, including Puerto Rico and the Navajo Nation. Most of the data are collected on children attending the Special Supplementary Food Pro-

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gram for Women, Infants, and Children (WIC), although some data come from other maternal and child health programs. The data collected include weight, height, hematocrit, and birthweight, as well as demographic data such as age, ethnic group, and geographic location. These data permit the calculation of the prevalence of underweight, overweight, short stature, anemia, and low birthweight in relation to age, ethnic group, and geographic location.

The other system, the Pregnancy Nutrition Surveillance System, monitors nutritional status and behavioral risks of pregnant women visiting 20 participating state health departments. Data collected include prepregnancy weight, weight gain during pregnancy, hematocrit or hemoglobin count, and prevalence and amount of cigarette smoking. These data are used to calculate nutritional status and behavioral risk factor prevalence as they relate to maternal age, ethnic group, and geographic location. The birthweight of the infant is also recorded and correlated with the mother's record.

PURPOSES OF CDC NUTRITION SURVEILLANCE

The Pediatric and Pregnancy Nutrition Surveillance Systems provide state health departments with a data base for policy formulation and planning, program management and evaluation, and advocacy.

Policy formulation and program planning. State health departments use data from the CDC nutrition surveillance systems directly in the support of these activities. The quarterly and annual reports provided by CDC to the states indicate the prevalence of specific nutrition-related problems such as underweight, overweight, short stature, anemia, and low birthweight. The data assist state nu-

trition directors in identifying groups at particular risk for these problems, and also indicate subregions of the state where problems are particularly prevalent. Data from pregnancy nutrition surveillance can be used to identify specific behaviors that affect birth outcome and that are amenable to intervention. Specific population groups at highest risk can also be identified.

Program management and evaluation. The monthly, quarterly, and annual nutrition surveillance reports provide state and local program directors with information useful for evaluation and management purposes. Clinics that have a consistently high (or low) prevalence of abnormalities can be identified and investigated. Often the problem stems from either new personnel at the clinic site who are making measurement errors or equipment that is not properly calibrated. These problems can be corrected by inservice training. If the high prevalence of abnormalities is determined to be real, added consultation and support can be given.

Advocacy. Surveillance data are useful for increasing awareness among policy makers and promoting nutrition activities and related political action to solve nutritional problems. National, state, and local nutrition advocates use surveillance data not only to support legislation for programs to improve the health of mothers and children but also to argue for increased resources to carry out these programs.

CASE STUDY

The following case study illustrates the use of surveillance data for advocacy and policy making. The public health issue involved is prevention of iron deficiency

among infants and children from low-income families.

The prevalence of iron deficiency anemia among infants has been decreasing in the United States over the past decade or longer. The decline, which has been documented both in the general population and in low-income groups, was suspected to be related to the increasing use of iron-fortified infant formula and foods. The main source of iron-fortified formula for infants in low-income families has been public health programs, especially the WIC program. However, an important issue in managing the WIC program is the cost of infant formula. Cow's milk costs much less than formula, and a suggestion had been made that it might be used instead of formula for infants over six months of age. The funds saved by substituting cow's milk for infant formula could be used to provide WIC services to more children and mothers, but children given cow's milk might not receive adequate iron.

Surveillance data from the CDC system were useful in addressing this dilemma. These data indicate that anemia prevalence among children from low-income families not only had declined significantly over time, but that the lowest prevalence of anemia was among children attending WIC clinics for follow-up visits after participating six months or longer in the WIC program and receiving iron-fortified formula and other program benefits.

The data suggest that a substantial decline in anemia has been associated with the provision of iron-fortified for-

mula by the WIC program. Thus, to stop giving iron-fortified formula to infants would be unwise until more definitive evidence exists that cow's milk and other dietary sources will provide adequate iron for children from low-income families. On the basis of these and other supporting data, the WIC program directors decided that infants of families enrolled in the WIC program should continue to receive iron-fortified formula to 12 months of age.

CONCLUSION

Data from CDC nutrition surveillance provide practical information to state health departments and to national-level policy makers that is useful for program planning, management, and advocacy. The data are state-specific and relate directly to low-income populations and minorities at increased nutritional risk. Moreover, the data are collected continuously so that trends over time can be monitored.

A cost is always associated with collecting surveillance data, but that cost is minimized by using data that are routinely collected in the normal course of prenatal and child care. Moreover, the cost of surveillance is modest when compared with the social and economic cost of ineffective policies and programs that may result from decisions made without adequate data. For all these reasons, nutrition surveillance should be considered an essential element of a national nutrition program.

