DISEASES AND DATA BASES

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HEW (1979) identified 15 objectives for promoting health and preventing disease for the 1990s. A recommendation in nutrition is the establishment of an operational comprehensive nutritional status monitoring system to provide early detection of nutritional problems for certain population groups, as well as baseline data for decisions on national nutritional policies. Between 1972 and 1978 10 to 15 percent of infants and children suffered growth retardation due to dietary inadequacies. Retardation caused by restricted access to food by 1990 will be eliminated and low birth weight babies (2500 grams and under) reduced from 7.1 to 5 percent of all live births. Other recommendations include nutritional education in elementary schools.

The nutritional health information system to be established must therefore include means of measuring efficacy, whether participants are better or worse off for intervention, effectiveness, the extent of unmet need, and efficiency, whether the best use is being made of resources.

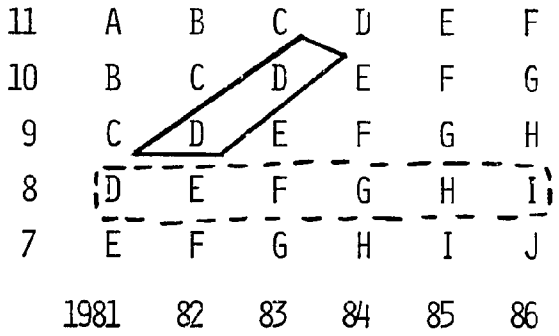
Although the existing nutrient data bases in this country are suited for the purposes for which they have been designed, in general, the data collected tends to be too specific and extensive for economic application on a wide enough scale. They also tend to lack the capability of obtaining information from the same individual over time.

Perhaps in the past insufficient attention has been paid to the fetus as a means of monitoring both genetic and environmental factors including nutrition both as a means of compressing the investigational time scale and as an informational baseline for longitudinal studies. Birth weights are reliable and gestational age improving. Both sets of information are already collected routinely for other purposes. A new nutritional data base would establish a nutritional register to examine outcomes in mortality in the first year of life by 500 gram intervals of birth weight related to gestational age. As well as serving the independent objective of monitoring reduction in infant mortality from 13.5 to 9.0 per 1,000 live births by 1990, groups of babies would be used for a national random, stratified sample in which medical record linkage would ascertain growth and morbidity. By extension of the sample to ten years of age major defects associated with low birth weight would be observed over 3 years and minor defects over 10. Standard anthropometric measurements of height and weight at school entry and at fourth grade would provide birth cohort surveillance of nutritional and other indices. Irwig (1976) provides simple means of comparing annual growth rate and height and weight in successive cohorts over time (see diagram). Percentage deficit cut-points such as 80 percent for weight and 90 percent for height (Waterlow, 1973) and standard deviation units such as those derived from the NCHS growth curves (1977) could be given true biological value by measuring short-term mortalilty outcomes like Kielmann and McCord (1978) and long-term morbidity and other outcomes like sickness absence or educational attainment up to 10 years of age.

The resultant national nutritional data register and health information system could form the nucleus for a fully integrated information system that would inform existing nutritional agencies and allow them to direct their expertise and resources to establishing more specific baselines for longitudinal studies including random control trials of interventive procedures for high risk groups.

DISEASES AND DATA BASES: DIAGRAM (after Irwig, L.M. 1976)

STUDY DESIGN



A TO J ARE SUCCESSIVE COHORTS.

—— comparison of change within successive cohorts: e.g. comparison of annual growth rates of successive cohorts.

- - - comparison of change over time between successive cohorts: e.g. height and weight

References

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