

2. Landesman S, Butterfield EC. Normalization and deinstitutionalization of mentally retarded individuals: controversy and facts. *Am Psychol.* 1987;42:809-16.
3. Zigler E, Hodapp RM. *Understanding Mental Retardation.* New York, NY: Cambridge University Press; 1986.
4. Lakin KC, Bruininks RH, eds. *Strategies for Achieving Community Integration of Developmentally Disabled Citizens.* Baltimore, Md: Paul H. Brookes; 1985.
5. Wolfensberger W. *The Principal of Normalization in Human Services.* Toronto, Canada: National Institute on Mental Retardation; 1972.
6. Bradley V. *Deinstitutionalization of Developmentally Disabled Persons.* Baltimore, Md: University Park Press; 1978.
7. Braddock D, Mitchell D. *Residential Services and Developmental Disabilities in the United States.* Washington, DC: American Association on Mental Retardation; 1992.
8. Strauss D, Eyman RK, Grossman HJ. Predictors of mortality in children with severe mental retardation: the effect of placement. *Am J Public Health.* 1996;86:1422-1429.
9. Eyman RK, Grossman HJ, Chaney RH, Call TL. The life expectancy of profoundly handicapped people with mental retardation. *New Engl J Ment Retard.* 1990;323:584-589.
10. Susser MW, Watson W. *Sociology in Medicine.* London, England: Oxford University Press; 1970.
11. Susser MW. Disease, illness, sickness, impairment, disability and handicap. *Psychol Med.* 1990;20:471-473.
12. World Health Organization. *International Classification of Impairments, Disabilities and Handicaps.* Geneva, Switzerland: World Health Organization; 1980.
13. Nagi SZ, Haller RI. *Limitations in Function: Indicators and Measures.* Columbus, Ohio: Ohio State University; 1982.
14. Pope AM, Tarlov AR. *Disability in America: Toward a National Agenda for Prevention.* Washington, DC: National Academy Press; 1991.
15. Knobbe CA, Carey SP, Rhodes L, Horner RH. Benefit-cost analysis of community residential versus institutional services for adults with severe mental retardation and challenging behaviors. *Am J Ment Retard.* 1995;99:533-541.
16. Hatton C, Emerson E, Robertson J, Henderson D, Cooper J. The quality and costs of residential services for adults with multiple disabilities: a comparative evaluation. *Res Dev Disabil.* 1995;16:439-460.
17. *International Statistical Classification of Diseases and Related Health Problems.* 10th rev. Geneva, Switzerland: World Health Organization; 1992.

Editorial: Social Class and Asthma—Distinguishing between the Disease and the Diagnosis

Recent work has identified inner cities as areas of high asthma morbidity and mortality.¹ Much interest has centered around whether these areas also have high rates of asthma prevalence. At least one inner-city area, the Bronx in New York City, has been identified as an area with an extraordinarily high level of asthma—12.8%—among children less than 18 years of age.² More recent work has discovered that high asthma prevalence is not limited to inner cities. Los Alamos, NM, a predominantly White middle/upper-class community, was reported to have an asthma rate of 13% among 12- to 14-year-olds.³ Prevalence differences tend to be more consistent across racial groups. In both US national health surveys, the National Health and Nutrition Examination Survey (NHANES) and the National Health Interview Survey (NHIS), African-American children reported higher rates of asthma than White children.^{4,5}

In this issue of the Journal, Cunningham and colleagues⁶ report the results of a school-based survey among 9- to 11-year-olds in Philadelphia, Pa. Diagnosed active asthma was more common among African-American children than among White children. However, there was no racial difference in the presence of persistent wheeze. Seventy-two percent of African-American children with wheezing had been given the diagnosis of asthma, as compared with only 57% of White children. Potential confounders, including

social position, did not “explain” these differences.

From these data, it appears that, at least in Philadelphia, a racial difference exists in the acquisition of the diagnosis of asthma, given that a child has persistent wheezing. In the United States, race is a surrogate for social position. Disparities in social position play a large role in the racial differences in many forms of morbidity and mortality.⁷ What is the potential role of social position in this difference in the diagnosis but not in the symptoms of disease?

A number of studies have obtained results similar to those of Cunningham et al.: among children 6 months to 11 years old from the 1976–1980 NHANES, diagnosed asthma and wheezing were more frequent among Blacks than among Whites, but in the final logistic models, wheezing was not associated with social position although diagnosed asthma increased with decreasing family income and inner-city residence.⁸ In the Bronx, among children younger than 18 years, wheezing for those without the diagnosis of asthma was not related to family income.² Again, the frequency of the diagnosis of asthma increased with decreasing family income. In East Boston, Mass, among predominantly Italian-American children 4 to 10 years old, persistent wheezing did not relate to density of persons per room.⁹ In rural Pennsylvania, by contrast, among children 5 to 14 years old, social position had no

influence on either wheezing or diagnosed asthma.¹⁰ Thus, in urban settings and among the US population as a whole, the prevalence of wheezing seems to be independent of social position, but that of diagnosed asthma is not.

An early national British study yielded somewhat different results. The 1958 British Birth Cohort study found that, among children aged 11 years, wheezy bronchitis without the diagnosis of asthma had no relation to social position, but diagnosed asthma increased with increasing social position.¹¹ More recent work in Great Britain found that among 5- to 17-year-olds, diagnosed asthma was not related to social position.¹² Similarly, in Montreal, Canada, a school-based survey of 5- to 13-year-old children found that social position was not related to either wheezing or diagnosed asthma.¹³

The absence of an excess of diagnosed asthma among the lower social classes in Canada and Great Britain and its presence in urban United States possibly could be a reflection of differences in health care systems. St. Peter et al.¹⁴ evaluated access to care among children less than 18 years of age, using data from the 1988 Child Health Supplement of the NHIS. Children receiving Medicaid were less likely than children living above the poverty line to identify a physician's office as their site for routine

Editor's Note. See related article by Cunningham et al. (p 1406) in this issue.

care and were more likely to lack continuity between usual sources of routine and sick care.

What consequences might lack of continuity have on the acquisition of a diagnosis for a wheezing illness? A wide range of nonmedical factors involving both the treating physician (from the practice environment to the physician's age) and the patient (social position, race, gender, etc.) have been found to affect clinical judgment.¹⁵ Familiarity with a patient can affect how quickly a physician assigns a diagnosis. For instance, among a group of British general practitioners, familiarity with the patient was among the factors that predicted both the labeling and treatment of women presenting with lower urinary tract symptoms.¹⁶ When doctors knew the patient, they were less likely to assign a diagnosis and offer treatment before the results of the urine culture were back.

In the urban United States, physicians treating poor children for attacks of wheezing would tend to be unfamiliar with them, because of the episodic nature of their care, and thus would be more quick to label and treat the episode of wheezing. The assignment of a diagnostic label to the wheezing episode is an important step in treatment. Anti-asthmatic drugs are reported to have been used to a much greater degree when episodes of wheezing were diagnosed as asthma than when they were not.¹⁷

The particular source of care may also favor the acquisition of a diagnostic label for wheezing. St. Peter et al.¹⁴ found that poor children were more likely than others to identify an emergency department as their usual source of care. The assignment of an asthma label to a wheezing episode may follow much more quickly than it might in a nonurgent care setting. Thus, we are faced with the paradox that inadequate care can contribute to increased diagnostic labeling of wheezing episodes among poor children.

Of course, the type of medical care received is but one of several possible mechanisms by which social position affects the acquisition of an asthma diagnosis.

What might the incoherent distributions of symptoms and diagnosis mean for the study of the determinants of asthma prevalence? The implications are that two types of risk factors are associated with asthma prevalence. The first type consists of predictors of the disease asthma, without regard to the diagnosis; the second type consists of predictors of the acquisition of the diagnostic label for asthma. Both types of factors can be informative. Predictors of the disease asthma will guide us towards an understanding of its etiologic underpinnings and prevention. The predictors of the acquisition of the diagnostic label tell us something about how we are delivering health care to various segments of our society. These predictors may change as our health care system undergoes reforms or evolution. We need to understand both sets of predictors to clarify and deepen our understanding of the disease. □

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References

- Lang DM, Polansky M. Patterns of asthma mortality in Philadelphia from 1969 to 1991. *N Engl J Med.* 1994;331:1542-1546.
- Crain EF, Weiss KB, Bijur PE, Hersh M, Westbrook L, Stein REK. An estimate of the prevalence of asthma and wheezing among inner-city children. *Pediatrics.* 1994; 94:356-362.
- Sporik R, Ingram JM, Price W, Sussman JH, Honsinger RW, Platts-Mills TAE. Association of asthma with serum IgE and skin test reactivity to allergens among children living at high altitudes. Tickling the dragon's breath. *Am J Respir Crit Care Med.* 1995;151:1388-1392.
- Gergen PJ, Mullally DI, Evans R III.

- National survey of prevalence of asthma among children in the United States. 1976 to 1980. *Pediatrics.* 1988;81:1-7.
- Halfon N, Newacheck PW. Childhood asthma and poverty: differential impacts and utilizations of health services. *Pediatrics.* 1993;91:56-61.
- Cunningham J, Dockery DW, Speizer FE. Race, asthma, and persistent wheeze in Philadelphia schoolchildren. *Am J Public Health.* 1996;86:1406-1409.
- Pappas G. Elucidating the relationships between race, socioeconomic status, and health. *Am J Public Health.* 1994;84:892-893.
- Schwartz J, Gold D, Dockery DW, Weiss ST, Speizer FE. Predictors of asthma and persistent wheeze in a national sample of children in the United States. Association with social class, perinatal events, and race. *Am Rev Respir Dis.* 1990;142:555-562.
- Weiss ST, Tager IB, Speizer FE, Rosner B. Persistent Wheeze. Its relation to respiratory illness, cigarette smoking, and level of pulmonary function in a population sample of children. *Am Rev Respir Dis.* 1980;122: 697-707.
- Schenker MB, Samet JM, Speizer FE. Risk factors for childhood respiratory disease. The effect of host factors and home environmental exposures. *Am Rev Respir Dis.* 1983;128:1038-1043.
- Peckham C, Butler N. A national study of asthma in childhood. *J Epidemiol Community Health.* 1978;32:79-85.
- Strachan DP, Anderson HR, Limb ES, O'Neill A, Wells N. A national survey of asthma prevalence, severity, and treatment in Great Britain. *Arch Dis Child.* 1994;70: 174-178.
- Ernst P, Demissie K, Joseph L, Locher U, Becklake MR. Socioeconomic status and indicators of asthma in children. *Am J Respir Crit Care Med.* 1995;152:570-575.
- St. Peter RF, Newacheck PW, Halfon N. Access to care for poor children. *JAMA.* 1992;267:2760-2764.
- Eisenberg JM. Sociologic influences on decision-making by clinicians. *Ann Intern Med.* 1979;90:957-964.
- Nazareth I, King M. Decision making by general practitioners in diagnosis and management of lower urinary tract symptoms in women. *BMJ.* 1993;306:1103-1106.
- Anderson HR, Bailey PA, Cooper JS, Palmer JC. Influence of morbidity, illness label, and social, family, and health service factors on drug treatment of childhood asthma. *Lancet.* 1981;2:1031-1032.

Comment: Recent Twists and Turns in American Indian Health Care

A luminary in American Indian studies recently commented to me that, when the Clinton Administration began groping for an affordable program to deliver high-quality health care to all US citizens, the Indian Health Service (IHS) should have been the model of choice.

During its short life of fewer than 40 years, the IHS has provided full and frequently innovative medical services to the nation's Indians, Eskimos, and Aleuts. Prior to the niggardly budgets of the Reagan Administration, two such pace-setting ventures of the 1970s were the

tracking of clients and communication with their health care professionals via satellite in southern Arizona, and the

Editor's Note. See related article by Kunitz (p 1464) in this issue's Public Health Then and Now.