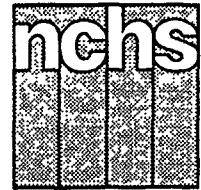


# Clearinghouse on Health Indexes



From the CENTERS FOR DISEASE CONTROL AND PREVENTION/National Center for Health Statistics

## Bibliography on Health Indexes

2 ACKNOWLEDGMENTS

3 ANNOTATIONS

3 Berkanovic, Emil; Hurwicz, Margo-Lea: Rheumatoid Arthritis and Comorbidity: *Journal of Rheumatology* 17(7):888-892, 1990

3 Brooks, W. Blair; Jordan, John S.; Divine, George W.; Smith, Karen S.; Neelon, Francis A.: The Impact of Psychologic Factors on Measurement of Functional Status Assessment of the Sickness Impact Profile: *Medical Care* 28(9):793-804, 1990

4 Cohen-Mansfield, Jiska; Werner, Perla; Marx, Marcia S.: Screaming in Nursing Home Residents: *Journal of the American Geriatrics Society* 38(7):785-792, 1990

4 Collings, John A.: Epilepsy and Well-Being: *Social Science and Medicine* 31(2):165-170, 1990

4 Curbow, Barbara; Somerfield, Mark; Legro, Marcia; Sonnega, John: Self-Concept and Cancer in Adults: Theoretical and Methodological Issues: *Social Science and Medicine* 31(2):115-128, 1990

5 Daltroy, Lawren H.; Larson, Martin G.; Roberts, W. Neal; Liang, Matthew H.: A Modification of the Health Assessment Questionnaire for the Spondyloarthropathies: *Journal of Rheumatology* 17(7):946-950, 1990

5 Duffy, Mary E.; MacDonald, Ellen: Determinants of Functional Health of Older Persons: *Gerontologist* 30(4):503-509, 1990

5 Ehrlich, Isaac; Chuma, Hiroyuki: A Model of the Demand for Longevity and the Value of Life Extension: *Journal of Political Economy* 98(4):761-782, 1990

6 Fillenbaum, G.; Heyman, A.; Williams, K.; Prosnitz, B.; Burchett, B.: Sensitivity and Specificity of Standardized Screens of Cognitive Impairment and Dementia Among Elderly Black and White Community Residents: *Journal of Clinical Epidemiology* 43(7):651-660, 1990

6 Grand, A.; Grosclaude, P.; Bocquet, H.; Pous, J.; Albarede, J.L.: Disability, Psychosocial Factors and Mortality Among the Elderly in a Rural French Population: *Journal of Clinical Epidemiology* 43(8):773-782, 1990

(continued on page 37)



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service  
Centers for Disease Control  
National Center for Health Statistics



**BIBLIOGRAPHY on HEALTH INDEXES****ACKNOWLEDGMENTS**

Overall responsibilities for planning and coordinating the content of this issue rested with the Clearinghouse on Health Indexes, which is located in the Health Status Measurement Branch, Division of Epidemiology and Health Promotion, Office of Analysis and Epidemiology. The bibliography is compiled and edited by Pennifer Erickson with the assistance of Luz Chapman. Final publication was formatted by Annette Gaidurgis of the Publications Branch, Division of Data Services, Office of Data Processing and Services.

This issue contains annotated citations of literature on composite measures of health status and quality of life, both published and unpublished, that became available in April, May, or June 1988. Materials searched in the preparation of this issue are given in the section entitled Sources of Information which follows the annotation section. Bibliographic citations are given in the standard form: author, title, and source of the article, designated by Au., Ti., and So., respectively. As many as five authors are listed; the sixth and additional authors are identified by et al. Abbreviations are avoided whenever possible.

Following the abstract, the number of references used in the preparation of the document and source of the annotation are given. There are four sources: (1) the author abstract designated by AA; (2) the author summary, AS; (3) the author abstract or summary modified by Clearinghouse personnel, AA-M or AS-M; and (4) the Clearinghouse abstract CH-P, where the initial following the "-" indicates the individual responsible for the abstract.

Copies of items cited in the Clearinghouse bibliographies should be requested directly from the authors. The address for reprints is given after the abstract. When the request is to be sent to an author other than the first listed, the appropriate name is given along with the address.

#### REFERENCE NUMBER 1

Au: Berkanovic, Emil; Hurwicz, Margo-Lea  
 Ti: **Rheumatoid Arthritis and Comorbidity**  
 So: *Journal of Rheumatology* 17(7):888-892, 1990

Data collected from 288 patients with rheumatoid arthritis (RA) indicated that 54% of respondents also reported other chronic conditions, and that 20% rated at least one of these other conditions as severe. Both the frequency and severity of these comorbidities affected scores on measures of depressive symptoms, social connectedness and on the Arthritis Impact Measurement Scales. These findings suggest that the absence of controls for comorbidity may bias measures of functional status among patients with RA. (19 references) AA

Address for reprint requests: School of Public Health, UCLA, Los Angeles, California 90024

#### REFERENCE NUMBER 2

Au: Brooks, W. Blair; Jordan, John S.; Divine, George W.; Smith, Karen S.; Neelon, Francis A.  
 Ti: **The Impact of Psychologic Factors on Measurement of Functional Status Assessment of the Sickness Impact Profile**  
 So: *Medical Care* 28(9):793-804, 1990

In this study the relationship between four psychologic health constructs (depression, anxiety, patient response bias, and hostility) and the Sickness Impact Profile (SIP) measurement of functional status was evaluated. The SIP, Carroll Depression Rating Scale (CDRS); and the Minnesota Multiphasic Personality Inventory (MMPI) were administered to 332 patients hospitalized for treatment of combined medical and psychiatric problems. Pearson's product-moment correlation was high between CDRS and SIP Total score ( $r=0.67$ ) and between CDRS and SIP Psychosocial subscale ( $r=0.72$ ); correlation was lower between CDRS and SIP Physical subscale ( $r=0.44$ ). Six MMPI scales (depression, anxiety, psychasthenia, lie, K, hostility) correlated with SIP Total score ( $r=0.18$  to  $0.50$ ), with SIP Psychosocial score ( $r=0.28$  to  $0.65$ ) and less well with SIP Physical subscale ( $r=0.007$  to  $0.25$ ). Factor analysis of the SIP categories showed two factors with eigenvalues greater than 1. Promax factor rotation showed all SIP Psychosocial categories and all measured psychologic variables loaded most heavily on factor 1. SIP Physical categories loaded most heavily on factor 2. Stepwise multiple regression analysis showed that psychologic variables account for 49% of the SIP total variance, 62% of SIP Psychosocial subscale variance, but only 19% of SIP Physical subscale variance. The CDRS accounts for the major portion of the explained variance with only minor

additional contributions for the MMPI scales. We conclude that 1) the SIP discriminates psychosocial and physical dysfunction even in medical patients with extensive psychiatric comorbidity; 2) the SIP measures at least two dimensions of health, one of which is strongly related to depression; and 3) constructs measured by MMPI scales do not have substantial independent contribution to SIP variance. (48 references) AA

Address for reprint requests: Dartmouth-Hitchcock Medical Center, Hanover, New Hampshire 03756

### REFERENCE NUMBER 3

Au: Cohen-Mansfield, Jiska; Werner, Perla; Marx, Marcia S.

Ti: **Screaming in Nursing Home Residents**

So: *Journal of the American Geriatrics Society* 38(7):785-792, 1990

This article reports the results of two studies of screaming in the nursing home. The first was a survey study of 408 nursing home residents, which revealed that 25% of the residents screamed at least four times a week. Screaming was associated with cognitive impairment, depressed affect, social networks of poor quality, and severe impairment in the performance of activities of daily living. The second study was an in-depth observational study of five residents who screamed frequently. Residents screamed more often when they were alone in their rooms during the evening hours, suggesting the screaming may arise as a response to social isolation. (20 references) AA

Address for reprint requests: Hebrew Home of Greater Washington, 621 Montrose Road, Rockville, Maryland 20852

### REFERENCE NUMBER 4

Au: Collings, John A.

Ti: **Epilepsy and Well-Being**

So: *Social Science and Medicine* 31(2):165-170, 1990

This study examined the association between social, psychological and physical well-being and a range of epilepsy-related and socio-demographic variables in a sample of people with epilepsy. A questionnaire method was used and the sample of 392 people with epilepsy was drawn from urban and rural epilepsy support groups in several regions of Great Britain and Ireland, and a hospital out-patients' population. The findings revealed that people's perceptions of themselves and of their epilepsy were the variables most strongly related to overall well-being, and that seizure frequency, time since diagnosis, a diagnosis of absence seizures and being employed full-time also seemed of some importance. The study's findings have implications for the management of people with epilepsy and suggest that ratings of subjective experience could be usefully incorporated into future research on social and psychological aspects of seizure disorders and other disabilities. (20 references) AA

Address for reprint requests: Department of Social Studies, Leeds Polytechnic, Calverley St., Leeds LS1 3HE, England

### REFERENCE NUMBER 5

Au: Curbow, Barbara; Somerfield, Mark; Legro, Marcia; Sonnega, John

Ti: **Self-Concept and Cancer in Adults: Theoretical and Methodological Issues**

So: *Social Science and Medicine* 31(2):115-128, 1990

Research and theory development on the self-concept have increased dramatically over the last decade. Investigators of the psychosocial aspects of cancer have utilized the self-concept as both an independent and dependent variable. This article discusses quantitative adult studies from the self-concept and cancer

literature in terms of their correspondence with current conceptualization of the self-concept in psychology. The wide gap between recent empirical work and self-concept theorizing is discussed and strategies for future investigations of the self-concept/cancer relationship are outlined. (91 references) AA

Address for reprint request: Johns Hopkins University, Baltimore, Maryland 21205

#### REFERENCE NUMBER 6

Au: Daltroy, Lawren H.; Larson, Martin G.; Roberts, W. Neal; Liang, Matthew H.

Ti: **A Modification of the Health Assessment Questionnaire for the Spondyloarthropathies**

So: *Journal of Rheumatology* 17(7):946-950, 1990

A functional status measure was developed by adding 5 items to the Health Assessment Questionnaire (HAQ-S), and compared to anthropometric measures of spinal mobility. Forty-four patients with spondylitis were evaluated by the HAQ-S and measures of spine flexibility (finger-to-floor, Smythe test, neck rotation, and chest expansion). Modification of the HAQ raised the mean difficulty score by 29% from 0.38 (SD=0.49) to 0.49 (SD=0.51), indicating increased ability to capture functional limitations. Neck rotation correlated most strongly with the HAQ-S score ( $r = -0.57$ ), which suggests an important role for this measure in clinical management and followup of spondylitis. (14 references) AA

Address for reprint requests: Brigham and Women's Hospital, 75 Francis Street, Boston, Massachusetts 02115

#### REFERENCE NUMBER 7

Au: Duffy, Mary E.; MacDonald, Ellen

Ti: **Determinants of Functional Health of Older Persons**

So: *Gerontologist* 30(4):503-509, 1990

The study investigated relationships among demographics, self-esteem, health locus of control, health promotion behaviors, perceived health and functional health ratings in 179 older men and women from 65 to 99 years. Canonical correlation and stepwise discriminant analyses demonstrated several meaningful and significant relationships suggesting that exercise and nutrition may be critical health promotion activities associated with better scores on five functional dimensions. The 85+ years age group differed from younger groups through having significantly higher reported exercise scores. (39 references) AA

Address for reprint requests: The University of Texas Health Science Center at Houston, 1000 Holcombe Blvd., HMB 5.518B, Houston, Texas 77030

#### REFERENCE NUMBER 8

Au: Ehrlich, Isaac; Chuma, Hiroyuki

Ti: **A Model of the Demand for Longevity and the Value of Life Extension**

So: *Journal of Political Economy* 98(4):761-782, 1990

We specify a demand function for longevity, or "quantity of life," along with corresponding demand functions for indicators of "quality of life" and a value-of-health and life extension function. We show that the demand for health must be derived in conjunction with that for longevity and the related consumption plan, and that all choices depend on initial individual endowments and terminal conditions. Our comparative dynamics predictions indicate that optimal health and longevity are increasing functions of endowed wealth rather than, necessarily, current income; that improvements in opportunities to produce health can accentuate the differences between endowed health and attained longevity levels; and that the value individuals ascribe to their health may be increasing over a good portion of their life cycle. We use this model to analyze observed empirical variations in levels and trends of life expectancy and in exposure to health risks across different population groups. (15 references) AA

Address for reprint requests: State University of New York, Buffalo, New York

**REFERENCE NUMBER 9**

Au: Fillenbaum, G.; Heyman, A.; Williams, K.; Prosnitz, B.; Burchett, B.

Ti: **Sensitivity and Specificity of Standardized Screens of Cognitive Impairment and Dementia Among Elderly Black and White Community Residents**

So: *Journal of Clinical Epidemiology* 43(7):651-660, 1990

Six standardized published measures of cognitive function were evaluated as screens of dementia in a sample of 164 (83 black, 81 white) community residents aged 65 and over selected from the Duke University EPESE (Established Populations for Epidemiologic Studies of the Elderly), a biracial cohort of 4,164 residents in a five-county area of piedmont North Carolina. Of these 164 persons, 26 were subsequently diagnosed as demented. The weighted data from this sample represent the estimated performance of these measures among elderly blacks and whites in a five county area. The 6 measures evaluated in this study (specificity figures for blacks precede those for whites) were (1) Orientation-Memory-Concentration Test (38%, 79%), (2) Mental Status Questionnaire (71%, 96%), (3) Mini-Mental State (58%, 94%), (4) Storandt et al. Battery (42%, 69%), (5) Iowa Battery (26%, 69%), and (6) Kendrick Cognitive Tests (92%, 97%). All but the Kendrick Cognitive Tests showed substantial sensitivity (90-100%) in detecting the presence of dementia. The specificity of the tests was particularly poor for blacks. The briefer, simpler measures tended to have greater accuracy than the longer and more complex measures. With rare exceptions, the scores obtained on these screens correlated with race and education. (26 references) AA

Address for reprint requests: Department of Medicine, Duke University Medical Center, Durham, North Carolina 22710

**REFERENCE NUMBER 10**

Au: Grand, A.; Grosclaude, P.; Bocquet, H.; Pous, J.; Albarede, J.L.

Ti: **Disability, Psychosocial Factors and Mortality Among the Elderly in a Rural French Population**

So: *Journal of Clinical Epidemiology* 43(8):773-782, 1990

The purpose of this work is to identify risk markers of mortality in a cohort of 645 people aged 60 and over. The study was carried out in rural areas in southwest France. Data were collected by questionnaire in 1982. Mortality was determined 4 years later; 111 deaths were registered. The analysis of age-adjusted odds ratios (OR) showed strong relationships between mortality and disability (OR=7.75), compared health (OR=3.94), self-rated health (OR=2.47), home comfort (OR=0.52), physical activity (OR=0.32), sociability (OR=0.43), and two subjective well-being items: the feeling of uselessness (OR=3.51), and the lack of projects for the future (OR=2.35). By contrast, no significant association was observed with reported morbidity and social support. Two multivariate analyses were performed: the first on longevity using Cox's regression model, the second on mortality using a linear discriminant analysis. The results of these analyses were translated into a simple set of 8 independent risk markers for the identification of a "high risk group" of mortality within 4 years. The sensitivity of this mortality risk indicator was 73% and its specificity 77%. (27 references) AA

Address for reprint requests: Laboratoire d'Epidemiologie, Economie de la Sante et Prevention, Faculte de Medecine, 37 allees Jules Guesde, F-31073 Toulouse Cedex, France

**REFERENCE NUMBER 11**

Au: Guccione, Andrew A.; Felson, David T.; Anderson, Jennifer J.

Ti: **Defining Arthritis and Measuring Functional Status in Elders: Methodological Issues in the Study of Disease and Physical Disability**

So: *American Journal of Public Health* 80(8):945-946, 1990

This study explores the degree to which the association of knee osteoarthritis with physical disability changes with different definitions of osteoarthritis in 1,416 Framingham Study elders. When all categories of radiographic osteoarthritis were aggregated into a single "arthritis" variable and dependence upon human assistance in one or more functional activities combined into a single variable, elders with osteoarthritis had only moderately increased odds for dependence after controlling for age or sex (OR=1.25). A definition of osteoarthritis based only upon symptoms produced larger odds for dependency (OR=1.85). Elders with mild osteoarthritis and infrequent knee pain had no significantly elevated risk for dependence in any of the seven functional activities. Elders with infrequently symptomatic, moderate to marked radiographic osteoarthritis were at increased risk for dependence in stair climbing, walking a mile, housekeeping, and carrying bundles. Elders with radiographic osteoarthritis accompanied by frequent pain had increased odds of dependence in stair climbing, walking a mile, and housekeeping. Using a generic definition of "arthritis" and aggregating functional activities may underestimate the impact of osteoarthritis on physical disability in the elderly and obscure the task-specific nature of that relationship. (19 references) AA

Address for reprint requests: University of School of Medicine, 80 E. Concord Street, Boston, Massachusetts 02118

**REFERENCE NUMBER 12.**

Au: Gunderman, Richard B.

Ti: **Health and Fitness**

So: *Perspectives in Biology and Medicine* 33(4):577-588, 1990

The author sees health as a kind of fitness, a fitness for love, for work, for play, for thought — in short, a fitness for life itself. In this essay, the author sketches health from three different perspectives, related to different ideas of fitness. These fitnesses have both biological and ethical connotations. In our pursuit of health, for what kind of life do we aim to render ourselves fit? (7 references) AA-M

Address for reprint requests: 5107 South Blackstone Ave., #1204, Chicago, Illinois 60615

**REFERENCE NUMBER 13**

Au: House, James S.; Kessler, Ronald C.; Herzog, A. Regula

Ti: **Age, Socioeconomic Status, and Health**

So: *Milbank Quarterly* 68(3):383-411, 1990

The results of this study suggest that reduction of socioeconomic differentials in health in middle and early old age must be an essential component of any effort to further postpone morbidity, disability, and mortality. Thus, efforts to deal with problems of aging and health must attend much more than heretofore to socioeconomic differentials. Conversely, efforts to reduce socioeconomic inequalities in adult health must increasingly focus on middle and early old age. (61 references) AS-M

Address for reprint requests: University of Michigan, Box 1248, Ann Arbor, Michigan 48106-1248

**REFERENCE NUMBER 14**

Au: Kempen, G.I.J.M.; Suurmeijer, T.P.B.M.

Ti: **The Development of a Hierarchical Polychotomous ADL-IADL Scale for Noninstitutionalized Elders**

So: *Gerontologist* 30(4):497-502, 1990

A hierarchical scale comprising 18 activities of daily living (ADL) and instrumental activities of daily living (IADL) items was tested on a sample of 101 noninstitutionalized people of 60 years and older in a northern part of the Netherlands. Three possible answers per item were used. The results confirmed the possibility of constructing a unidimensional, hierarchical, polychotomous scale for older people, measuring "functional problems on ADL-IADL." Moreover, the possibility of using two separate subscales (for ADL and IADL) was observed. (23 references) AA

Address for reprint requests: Department of Health Sciences, State University of Groningen, A. Deusinglaan 1, 9713 AV Groningen, The Netherlands

**REFERENCE NUMBER 15**

Au: Learman, Lee A.; Avorn, Jerry; Everitt, Daniel E.; Rosenthal, Robert

Ti: **Pygmalion in the Nursing Home: The Effects of Caregiver Expectations on Patient Outcomes**

So: *Journal of the American Geriatrics Society* 38:797-803, 1990

Several characteristics of nursing home care can diminish rather than enhance the clinical status of older residents. In view of evidence from other settings that "interpersonal expectancy effects" can influence outcomes in a variety of relations, we conducted a randomized controlled trial to test the effects of caregiver expectations on the clinical status of nursing home residents. Within 2 weeks of admission, 63 older residents at six nursing homes were given a comprehensive assessment of cognitive, functional, and emotional status. Residents were then randomly assigned to a "high-expectancy" or "average-expectancy" condition. Nurses and aides were told that, in comparison with other residents having similar problems, residents in the high-expectancy group were predicted to perform above average in their rehabilitation. The assessment was repeated 3 months later; information on the health and psychosocial status of residents was drawn from their medical records covering the same period. Aides reported having higher expectations for treatment group residents. When assessed by a blinded research assistant, residents in the high-expectancy group experienced greater relief of depressive symptoms but showed greater decrements in functional independence in comparison with control residents. Treatment group residents were admitted significantly less frequently to hospitals despite a comparable number of emergency ward visits, suggesting a lower incidence of severe illness despite comparable medical surveillance. There was also a trend toward improved performance in mental status testing among the high-expectancy residents compared with controls ( $P=.08$ ). Additional research is needed to define further the magnitude and mechanisms of expectancy effects in relations between nursing home caregivers and residents. (21 references) AA

Address for reprint requests: Program for the Analysis of Clinical Strategies, 333 Longwood Avenue, Boston, Massachusetts 02115

**REFERENCE NUMBER 16**

Au: Levitt, Anthony J.; Hogan, T.P.; Bucosky, Catherine M.

Ti: **Quality of Life in Chronically Mentally Ill Patients in Day Treatment**

So: *Psychological Medicine* 20(1):703-710, 1990

A structured assessment instrument, the Quality of Life Interview, was used to explain the quality of life of seventy patients with chronic psychiatric illness attending a day treatment program. The interview was found to have acceptable psychometric properties. Factors that best predicted the quality of life of



these patients included the number of re-admissions in the last year, frequency of family contacts, satisfaction with social life, psychiatric health and adult education. The theoretical implications and potential clinical benefits of these findings for chronic psychiatric patients are discussed. (33 references) AA

Address for reprint requests: Department of Psychiatry, Toronto General Hospital, 8EN-212, 200 Elizabeth St., Toronto, Ontario, M5G 2C4, Canada

#### REFERENCE NUMBER 17

Au: Liang, Matthew H.; Fossel, Anne H.; Larson, Martin G.

Ti: **Comparisons of Five Health Status Instruments for Orthopedic Evaluation**

So: *Medical Care* 28(7):632-642, 1990

This study represents a long-term effort to find optimal techniques for evaluating outcome in patients who have undergone total joint arthroplasty. Sensitivity of five health status questionnaires was studied in a longitudinal evaluation of orthopedic surgery. The questionnaires, Arthritis Impact Measurement Scales (AIMS), Functional Status Index (FSI), Health Assessment Questionnaire (HAQ), Index of Well Being (IWB), and Sickness Impact Profile (SIP), were administered to 38 patients with end-stage arthritis at three points in time: 2 weeks before hip or knee arthroplasty, and at 3-month and 12- to 15-month follow-up. Response values (i.e., changes within patients) were calculated on four scales: global health, pain, mobility, and social function. By the 3-month follow-up, most instruments detected large mean responses in global health, pain scores, and mobility. Smaller changes on these scales were found between three and 12 to 15 months. Social function showed small to modest gains at successive follow-ups. Standardized response means were calculated to assess sensitivity to detect change. Confidence intervals for these indices were constructed using a jackknife procedure, and significance tests were performed by pairing selected indices. Finally, the study projected sample sizes required to assess a new therapy, using each response. These statistical tools facilitated comparisons among instruments and may prove useful in other settings. (24 references) AA

Address for reprint requests: Brigham and Women's Hospital, 75 Francis St., Boston, Massachusetts 02115

#### REFERENCE NUMBER 18

Au: Liu, Korbin; Manton, Kenneth G.; Liu, Barbara Marzetta

Ti: **Morbidity, Disability, and Long-term Care of the Elderly: Implications for Insurance Financing**

So: *Milbank Quarterly* 68(3):445-491, 1990.

The long-term care population was found to be highly dynamic, especially at higher disability levels. As a result, costs, independent of current acute-care expenses, may be less than expected on an individual basis. These dynamics need to be better represented in the long-term care insurance calculations. If the accuracy of individual service predictions can be increased, then reserve requirements and overall costs can be reduced. The fundamental conclusion of the analysis is that the design of long-term care insurance involves many features quite different from the design of other insurance products. If the nascent private long-term-care insurance industry is to provide coverage for a substantial portion of the population of the U.S., product features will have to reflect the underlying morbidity and disability characteristics of the elderly population. These analyses will have to reflect both inputs to (i.e., health determinants) and outputs from the health and functional status of the elderly population to be covered. (41 references) AS-M

Address for reprint requests: The Urban Institute, Washington, D.C.

**REFERENCE NUMBER 19**

Au: Manton, Kenneth G.; Vertrees, James C.; Woodbury, Max A.

Ti: **Functionally and Medically Defined Subgroups of Nursing Home Populations**

So: *Health Care Financing Review* 12(1):47-62, 1990

The functional and health characteristics of nursing home residents in New York State using a multivariate classification procedure are examined in this article. This analysis suggested that these characteristics could be explained in terms of six dimensions. The association of these six dimensions with two existing sets of nursing home case-mix groups was analyzed in order to determine how groups based only on the health and functional characteristics of residents related to groups based primarily on measures of current service use. A number of resident characteristics were not described well by case-mix measures based only on service use, suggesting the need to modify such groups using additional sources of input. (16 references)

AA

Address for reprint requests: Duke University, Center for Demographic Studies, 2117 Campus Drive, Durham, North Carolina 27706

**REFERENCE NUMBER 20**

Au: Mayou, Richard; Bryant, Bridget; Turner, Robert

Ti: **Quality of Life in Non-Insulin-Dependent Diabetes and a Comparison with Insulin-Dependent Diabetes**

So: *Journal of Psychosomatic Research* 34(1):1-11, 1990

The reported effects of diabetes on quality of life have been assessed in two groups of attenders at out-patient clinics: 1. One hundred and twenty-one non-insulin-dependent diabetic patients randomly allocated to diet, tablet or ultralente insulin therapy; 2. Fifty-seven patients with insulin-dependent diabetes consecutively attending an out-patient clinic. The overall picture for those with non-insulin-dependent diabetes was of relatively little disruption to most areas of life, but 27% reported considerable loss of enjoyment and reduction in social life. High fasting plasma glucose was significantly associated with fatigue and leisure difficulties. The type of therapy, tablet, diet, or insulin, made little difference to psychological, social or attitude variables. Those with insulin dependent diabetes showed similar psychological morbidity, but described a rather different pattern of social consequences with more effects on work and less on leisure. (16 references) AA

Address for reprint requests: University Department of Psychiatry, Warneford Hospital, Oxford OX3 7JX, England

**REFERENCE NUMBER 21**

Au: McEvoy, Mary Dee; McCorkle, Ruth

Ti: **Quality of Life Issues in Patient with Disseminated Breast Cancer**

So: *Cancer* 66(6):1416-1421, 1990

The article has reviewed components of quality of life specific to women with advanced breast cancer following two clinical courses: those who develop a recurrence and those who present with advanced disease. Additional research is warranted on the quality of life in women with advanced breast cancer. Work to date has clearly indicated that the management of women with advanced disease requires the resources available from a multidisciplinary perspective. Efforts to manage advanced breast cancer must include both current medical therapies and attention to the critical factors associated with enhancing the quality of their lives. Of final concern is the relationship of social class to advanced disease. More attention must be given to people who are economically disadvantaged because cancer incidence and mortality are

greater among poor people than among the affluent. Women with breast cancer who are economically disadvantaged may be particularly receptive to interventions that will enhance their quality of life. (41 references) AS-M

Address for reprint requests: Nursing Education Building, Philadelphia, Pennsylvania 19104-6096

#### REFERENCE NUMBER 22

Au: Norris, Fran H.; Murrell, Stanley A.

Ti: **Social Support, Life Events, and Stress as Modifiers of Adjustment to Bereavement by Older Adults**

So: *Psychology and Aging* 5(3):429-436, 1990

As part of a larger panel study, interviews were obtained from 3 samples of older adults: 45 persons who had recently lost a spouse, 40 who had lost a parent or child, and 45 who were not bereaved. Assessments were conducted before and after the deaths. In the widowed sample, health remained quite stable, but depression increased sharply, then remained elevated. Changes were minimal in the sample who had lost a parent or child and in the nonbereaved sample. Multiple regression procedures were used to identify factors that contribute to depression and health 9 months after the spouse's death. Postbereavement depression was associated with higher prebereavement depression, higher financial pressures, higher global stress, fewer new interests, and lower social support. Health was a function of prebereavement health, new interests, financial pressures, and global stress. In general, life events and resources had stronger effects in the widowed sample than in the comparison samples. (51 references) AA

Address for reprint requests: Department of Psychology, Georgia State University, University Plaza, Atlanta, Georgia 30303

#### REFERENCE NUMBER 23

Au: Phifer, James F.

Ti: **Psychological Distress and Somatic Symptoms after Natural Disaster: Differential Vulnerability Among Older Adults**

So: *Psychology and Aging* 5(3):412-420, 1990

In a panel study, more than 200 older adults were interviewed before and after a severe flood in southeastern Kentucky in 1984. The issue in this study was whether older adult flood victims were differentially vulnerable to increases in psychological and physical symptoms on the basis of their age, sex, marital status, occupational status, education level, and pre-flood symptom levels. Flood exposure was related to increase in depressive, anxiety, and somatic symptoms at 18 months post-flood. Within this older adult sample, men, those with lower occupational status, and persons aged 55-64 were at significantly greater risk for increases in psychological symptoms. Sociodemographic status did not moderate the impact of flood exposure on physical health. Implications for crisis-intervention services to older adult disaster victims are discussed. (58 references) AA

Address for reprint requests: Department of Rehabilitation Medicine, Spain Rehabilitation Center, University of Alabama, UAB Station, Birmingham, Alabama 35294

**REFERENCE NUMBER 24**

Au: Reschovsky, James D.; Newman, Sandra J.  
 Ti: **Adaptations for Independent Living by Older Frail Households**  
 So: *Gerontologist* 30(4):543-552, 1990

This paper examines how well older frail households cope with the requirements of independent living. Three groups of requirements are considered: household operation activities, housing consumption adjustments, and health-related activities. The analysis is based on the Survey of Housing Adjustments conducted by the Census Bureau for the Department of Housing and Urban Development, supplemented by data from the Annual Housing Survey. We find that those lacking financial resources and informal support are less likely to cope with independent living requirements, and that families bear the major burden. (13 references) AA

Address for reprint requests: Johns Hopkins University, Institute for Policy Studies, Baltimore, Maryland 21218

**REFERENCE NUMBER 25**

Au: Reuben, David B.; Laliberte, Linda; Hiris, Jeffrey; Mor, Vincent  
 Ti: **A Hierarchical Exercise Scale to Measure Function at the Advanced Activities of Daily Living (AADL) Level**  
 So: *Journal of the American Geriatrics Society* 38(8):855-861, 1990

Standard functional assessment instruments often fail to capture subtle impairment in community-dwelling older persons. To create a scale to measure function at the Advanced Activities of Daily Living (AADL) level, we chose three questions to separate a community sample into four levels: frequent vigorous exercisers (8.0%), frequent long walkers (10.8%), frequent short walkers (23.7%), and nonexercisers (57.5%). These levels of exercise formed a hierarchical scale that correlated positively in a graduated manner with progressively advanced social activities of daily living, current health status, and mental health. At 1-year follow-up, 20% of persons declined in exercise level, 63% showed no change in exercise level, and 17% improved their exercise level. Changes in exercise level in both directions were associated with changes in mental health status. The Advanced Activities of Daily Living scale may be a sensitive measure of earlier functional decline, but longer follow-up will be necessary to determine its clinical usefulness. (23 references) AA

Address for reprint requests: 10833 Le Conte Avenue, Los Angeles, California 90024

**REFERENCE NUMBER 26**

Au: Roberts, Robert E.; Kaplan, George A.; Camacho, Terry C.  
 Ti: **Psychological Distress and Mortality: Evidence from the Alameda County Study**  
 So: *Social Science and Medicine* 31(5):527-536, 1990

The relationship between psychological distress, in this case depression, and subsequent risk of mortality is examined using data from the Alameda County (California) Study, an 18-year, three-wave prospective investigation of psychosocial risk factors and health. The results indicate no relationship between psychological morbidity and all-cause mortality or specific causes of death. While these results are discordant with those reported from a majority of studies of psychiatric patients, they are concordant with a majority of community-based studies of the general adult population. Possible methodologic explanations are discussed which might account for disparate results reported to date, in particular failure to control for the effects of co-morbidity of somatic disorders and socioeconomic status. (64 references) AA

Address for reprint requests: Department of Health, Berkeley, California 94704

**REFERENCE NUMBER 27**

Au: Smith, Alwyn; Maynard, Alan; Evans, J. Grimley; Harris, John  
Ti: **The Ethics of Resource Allocation**  
So: *Journal of Epidemiology and Community Health* 44(3):187-190, 1990

This article represents the proceedings from a symposium held at the Society of Social Medicine at which Alwyn Smith chaired the session, Evans and Maynard presented and Harris served as discussant. Smith and Evans indicated that there is a political and perhaps moral dimension to the distribution of health care resources. Both believe that this contributes to essential aspects of choice. Maynard believes that economists and other analysts merely present data whereby moral and political decisions may be made. Harris is concerned that reliance on data and use of systematic approaches to allocating health resources will favor the more fortunate majority at the expense of the minority. (0 references) AS-M

**REFERENCE NUMBER 28**

Au: Smith, Laurel A.; Branch, Laurence G.; Scherr, Paul A.; Wetle, Terrie; Evans, Denis A.; et al.  
Ti: **Short-Term Variability of Measures of Physical Function in Older People**  
So: *Journal of the American Geriatrics Society* 38(9):993-998, 1990

Self-reported physical function was assessed in telephone interviews approximately 3 weeks apart for a sample of 193 persons aged 69 or older. Three measures of physical function were used: a modified Activities of Daily Living scale, three items proposed by Rosow and Breslau, and five items from among those used by Nagi-Agreement between first and second interviews were very good; most subjects reported no impairment in function at either interview. Among those who reported some impairment, the degree of limitation within the specific activities reported as limited and the total number of activities with any degree of limitation agreed exactly for most and within one level for almost all subjects. There was no evidence to suggest that age or cognitive impairment affected the variability of the responses, and reported declines and improvements in function were about equally common. (14 references) AA

Address for reprint requests: 180 Longwood Avenue, Boston, Massachusetts 02115

**REFERENCE NUMBER 29**

Au: Stone, Robyn I.; Murtaugh, Christopher M.  
Ti: **The Elderly Population with Chronic Functional Disability: Implications for Home Care Eligibility**  
So: *Gerontologist* 30(4):491-496, 1990

This paper assesses the effect of changes in the minimum number of activities of daily living (ADL) and instrumental activities of daily living (IADL), limitations, type of help, and duration of disability required on the size of the population potentially eligible for home care benefits. Only 411,000 elders meet very restrictive disability criteria, whereas over 4 million would be eligible under expansive criteria. The selection of disability criteria has important implications not only for the size of the eligible population but also for which groups qualify for benefits and which are excluded. (23 references) AA

Address for reprint requests: 5600 Fisher Lane, Parklawn Building, Room 18A-55, Rockville, Maryland 20857

**REFERENCE NUMBER 30**

Au: Sutherland, H.J.; Lockwood, G.A.; Boyd, N.F.

Ti: **Ratings of the Importance of Quality of Life Variables: Therapeutic Implications for Patients with Metastatic Breast Cancer**

So: *Journal of Clinical Epidemiology* 43(7):661-666, 1990

Metastatic breast cancer cannot be cured with currently available therapeutic agents, and the objectives of treatment must, therefore, be directed towards other goals that include the relief of symptoms and the preservation or restoration of function. The main objective of the study reported here was to examine the relative importance of 28 items concerned with general health or with disease and treatment to a group of patients with metastatic breast cancer. All items concerned aspects of quality of life whose relevance and importance to patients with metastatic breast cancer had been shown in previous work. Patients rated items according to importance using two methods, a Q sort and a linear analogue rating. General health items, notably self-care, mobility, and physical activity, appetite, sleep, and family relationships were ranked in the upper quartile of the group of items rated. By contrast, items concerned directly with the common side-effects of chemotherapy were given lower rankings. The ratings were shown to be reproducible. These results emphasize the importance of including in clinical trials of therapy that are palliative in intent, endpoints that include those aspects of quality of life that are of greatest importance to patients. (12 references) AA

Address for reprint requests: Departments of Medicine and Biological Research, Ontario Cancer Institute, Toronto, Canada M4X 1K9

**REFERENCE NUMBER 31**

Au: Tandon, P.K.

Ti: **Applications of Global Statistics in Analysing Quality of Life Data**

So: *Statistics in Medicine* 9(7):819-827, 1990

Quality of life (QOL) instruments usually consist of a number of components, each of which deals specifically with a particular functionally related dysfunction. In a clinical trial whose primary aim is the evaluation of the treatment by means of QOL instruments, analysis of each of the components usually consists of either univariate analysis of variance (ANOVA) or some non-parametric methods. This multiple testing approach can produce an increase in false positive findings. One attempt to correct for this is the Bonferroni adjustment. Another approach is to apply global statistics (parametric or non-parametric) for the null hypothesis of no treatment difference versus the alternative hypothesis that one treatment is uniformly better than the other for QOL instruments as a whole. Data from randomized double-blind trial of 111 congestive heart failure patients, which involved four QOL instruments, were analysed with univariate ANOVA, Bonferroni adjustment, parametric and non-parametric global statistics. The global statistics complemented the univariate methods and made the presentation of QOL data very effective. I recommend the general use of global statistics in analysis of QOL data. (10 references) AA

Address for reprint requests: Clinical Biostatistics, Sterling Research Group, Sterling Drug Inc., Malvern, Pennsylvania 19355

**REFERENCE NUMBER 32**

Au: Washburn, Richard A.; Jette, Alan M.; Janney, Carol A.

Ti: **Using Age-Neutral Physical Activity Questionnaires in Research with the Elderly**

So: *Journal of Aging and Health* 2(3):341-356, 1990

We compared physical activity levels reported on an age-neutral questionnaire with physical activity estimates derived from a 3-day activity diary in 123 community dwelling volunteers age 65-91 years. On

average, the questionnaire data underestimated the amount of time spent in physical activity by approximately 2 hours and 45 minutes per day. The magnitude of the absolute reporting error was small for the most strenuous activity category (approximately 5 minutes per day), but substantial for the least strenuous category (approximately 2 hours and 20 minutes per day). Reporting error was similar by respondents' age, gender, and health status, but higher among those with less education and income, and higher for those who did more physical activity. Our results suggest that age-neutral physical activity questionnaires should not be used in investigations involving older populations. A physical activity diary, which utilizes a categorical format to prompt and guide the respondent, may provide a more useful current alternative method for physical activity assessment in older people. (19 references) AA

Address for reprint requests: New England Research Institute, Inc., 9 Galen Street, Watertown, Massachusetts 02172

### REFERENCE NUMBER 33

Au: Wolfe, Frederick; Hawley, Donna J.; Cathey, Mary Ann

Ti: **Termination of Slow Acting Antirheumatic Therapy in Rheumatoid Arthritis: A 14-Year Prospective Evaluation of 1017 Consecutive Starts**

So: *Journal of Rheumatology* 17(8):994-1002, 1990

During a continuous 14-year observation period we prospectively recorded clinical data on all patients with rheumatoid arthritis (RA) attending an outpatient clinic. Six hundred seventy-one patients received 1017 new administrations of slow acting antirheumatic drugs during more than 2000 patient years of observation. The median time to discontinuation for intramuscular gold, auranofin, hydroxychloroquine or penicillamine was 2 years or less, but was 4.25 years of methotrexate ( $p=0.008$  vs. all other drugs combined). Adverse reactions were a more common reason for discontinuation than efficacy, and both were less common in patients taking methotrexate ( $p<0.01$ ). Neither disease duration, disease severity, or demographic factors were useful predictors of discontinuation. Since controlled clinical trials do not provide long-term outcome assessments, measurement of time to termination is a practical tool to estimate drug inefficacy. (51 references) AA

Address for reprint requests: Arthritis Center, 1035 N. Emporia, Wichita, Kansas 67214

### REFERENCE NUMBER 34

Au: Zwinderman, Aeilko H.

Ti: **The Measurement of Change of Quality of Life in Clinical Trials**

So: *Statistics in Medicine* 9(8):931-942, 1990

A model is presented for the measurement of change of quality of life in clinical trials with time under the influence of one or more treatments. Quality of life is regarded as a multidimensional latent variable, and is measured through dichotomous item responses on a number of points in time. Change of quality of life is "explained" with a latent logistic regression model which may include parameters for the time process, the effects of clinical treatments, and interaction parameters. By assuming the absence of patient/time interaction within treatment groups, the parameters of the time process and the treatment effects can be estimated independently of the latent quality of life parameters at the start of the treatment. Consequently, differential mortality, censoring mechanisms, and other mechanisms causing missing data can be ignored. (12 references) AA

Address for reprint requests: Department of Medical Statistics, University of Leiden, Post Office Box 9512, 2300 RA Leiden, The Netherlands

## Professional Journals Reviewed

Articles cited in the ANNOTATIONS Section have been identified from a set of journals that are routinely reviewed by the Clearinghouse staff. Each new issue is examined for book reviews, current research funding opportunities, and forthcoming conferences, as well as relevant articles. Journal titles along with the volume and issue number reviewed for this issue of the *Bibliography on Health Indexes* are listed below.

Acta Psychiatrica Scandinavica	82(2)(3)(1)	Hispanic Journal of Behavioral Science	12(3)
American Behavioral Scientist	33(6)	Home Health Care Services Quarterly	11(3/4)
American Journal of Economics and Sociology	49(3)	Inquiry	27(2)(3)
American Journal of Epidemiology	132(1–3)	International Journal of Aging and Human Development	31(1)(2)
American Journal of Medicine	89(1–3)	International Journal of Epidemiology	19(3)
American Journal of Orthopsychiatry	60(3)	International Journal of Mental Health	19(3)
American Journal of Psychiatry	147(7)(8)	Journal of Aging and Health	2(3)
American Journal of Psychology	103(3)	Journal of Applied Gerontology	9(3)
American Journal of Public Health	80(7–9)	Journal of Applied Psychology	75(4)
American Journal of Sociology	96(1)96(2)	Journal of Clinical Epidemiology	43(7–9)
American Political Science Review	84(3)	Journal of Community Health	15(4)
American Psychologist	45(7–9)	Journal of Consulting and Clinical Psychology	58(4)
American Sociological Review	55(4)	Journal of Epidemiology and Community Health	44(3)
Archives of Gerontology and Geriatrics	11(1)	Journal of Experimental Child Psychology	49(2)(3)50(1)
Archives of Physical Medicine and Rehabilitation	71(8–10)	Journal of Experimental Social Psychology	26(3)(4)(5)
Australian and New Zealand Journal of Psychiatry	24(3)	Journal of Family Practice	31(1–3)
Behavioral Medicine	16(3)	Journal of Health and Social Behavior	31(3)
Behavioral Science	35(3)	Journal of Health Economics	9(3)
British Journal of Cancer	62(13)62(Suppl)	Journal of Health, Politics, Policy and Law	15(3)
British Journal of Psychiatry	157(1–3)	Journal of Medical Systems	14(4)
British Journal of Psychology	81(3)	Journal of Nervous and Mental Diseases	178(7–9)
Canadian Medical Association Journal	143(1–6)	Journal of Pediatrics	117(1–3)117(2pt2) 117(1pt2)
Cancer	66(1–4)(5,6)(1–6)(Suppl 5–6)	Journal of Policy Analysis and Management	9(3)
Child Welfare	69(4)	Journal of Policy Modeling	12(3)
Clinical Psychology Review	10(4)	Journal of Political Economy	98(4)
Cognitive Psychology	22(3)	Journal of Psychopathology and Behavioral Assessment	12(3)
Cognitive Therapy and Research	14(4)	Journal of Public Health Policy	11(3)
Community Mental Health Journal	26(4)	Journal of Rheumatology	12(7–9)
Family and Community	13(2)	Journal of School Health	60(6)(7)
Geriatrics	45(7–9)	Journal of School Psychology	28(3)
Gerontologist	30(4)	Journal of Social Issues	46(3)
Health Affairs	9(2)(3)	Journal of Social Policy	19(3)
Health Care Financing Review	11(4)12(1)	Medical Care	28(7–9)
Health Education Quarterly	17(1–3)	Milbank Quarterly	68(3)
Health Policy	15(1–3)		
Health Psychology	9(4)		
Health Services Research	25(3)		
Health Values	14(4)		



New England Journal of Medicine	323(1–13)	Scandinavian Journal of Psychology	31(3)
New York Academy of Medicine Bulletin	66(4)	Social Forces	69(1)
Operations Research	38(4)	Social Indicators Research	23(1–2)
Perspectives in Biology and Medicine	33(3)(4)	Social Problems	37(3)
Philosophy and Public Affairs	19(3)19(2)	Social Psychology Quarterly	53(3)
Policy Sciences	23(3)	Social Science and Medicine	31(1–2)(4)(6)(3)
Policy Studies Journal	19(1)	Social Science Research	19(3)
Preventive Medicine	19(4)(5)	Social Security Bulletin	53(7)(9)
Psychological Medicine	20(3)	Socio-Economic Planning Sciences	24(3)
Psychology and Aging	5(3)	Sociological Methods and Research	19(1)
Psychosomatics Medicine	52(4)	Sociology and Social Research	74(4)
Psychosomatics	31(3)	Sociology of Health and Illness	12(3)
Review of Economics and Statistics	72(3)	Statistics in Medicine	9(7–9)
Risk Analysis	10(3)	World Health Forum	11(1–3)
		World Health Statistics Quarterly	43(3)

### Monographs, Government Documents, and Unpublished Reports

The unpublished reports cover work in progress and articles submitted for publication. Monographs, government publications, and unpublished reports cited in the ANNOTATIONS section have been received by the Clearinghouse during the July through September 1990 period. Thus, it is possible for unpublished materials that have been written prior to these months to appear in this issue.

This section lists citations to journal articles that have been classified under the medical subject heading (MeSH) "health status indicators" in the National Library of Medicine's MEDLARS system, specifically, in the SDILINE for July, August, or September 1990. Citations are printed with only slight modification of format, in the order and form in which they appear in NLM's files. Following NLM's convention, titles which are enclosed in brackets indicate that the article is published in some language other than English.

**REFERENCE NUMBER 35**

Au: DeFriese GH; Fielding JE

Ti: **Health risk appraisal in the 1990s: opportunities, challenges, and expectations**

So: *Annu Rev Public Health* 1990;11:401-18

Address for reprint requests: Health Services Research Center, University of North Carolina, Chapel Hill, North Carolina 27599-7490

**REFERENCE NUMBER 36**

Au: Pelletier L

Ti: **Health indicators and public health planning.**

So: *Rev Epidemiol Sante Publique* 1990;38(1):47-56

Health indicators are considered to be fundamental to the public health planning process. To a large extent, programs and services relevancy depends on indicators used for planning. Based upon a review of the literature, criteria for judging the acceptability of available indicators are presented and described. The principal health indicators developed for planning health programs and services are then analysed in terms of these criteria. The dimensions of health measured by the various indicators are noted together with the relevancy and limits of each group of indicators analysed.

Address for reprint requests: Ecole des sciences infirmieres, Universite Laval, Quebec, Canada

**REFERENCE NUMBER 37**

Au: Rothman KJ

Ti: **A sobering start for the cluster busters' conference.**

So: *Am J Epidemiol* 1990 Jul;132(1 Suppl):S6-13

**REFERENCE NUMBER 38**

Au: Bender AP; Williams AN; Johnson RA; Jagger HG

Ti: **Appropriate public health responses to clusters: the art of being responsibly responsive.**

So: *Am J Epidemiol* 1990 Jul;132(1 Suppl):S48-52

Between 1981 and 1988, the Minnesota Department of Health actively responded to over 400 reports from persons concerned about disease occurrence in their community, school, or workplace. Almost all of these reports involved perceived excesses of cases of cancer. Although there is little potential for identifying unsuspected public health problems or developing new etiologic insights, the Minnesota Department of Health has found that responding to reported clusters is a legitimate and necessary public health activity. To be responsibly responsive to these concerns, the Department has developed four steps to prioritize investigation of reported disease clusters, as well as six criteria for determination of the feasibility of environmental epidemiologic investigations. Approximately 95% of all concerns have been handled within the first two steps of this approach, generally requiring only education, or sometimes examination of readily-available data. Less than 5% of the concerns have required additional data collection and evaluation, and only about 1% have resulted in full-scale epidemiologic studies. Successful conclusions at

all levels of this process require that public health officials develop effective communication, maintain objectivity, and provide leadership for controversial and difficult issues.

Address for reprint requests: Section of Chronic Disease and Environmental Epidemiology, Minnesota Department of Health, Minneapolis, Minnesota 55440

#### REFERENCE NUMBER 39

Au: Hardy RJ; Schroder GD; Cooper SP; Buffler PA; Prichard HM; Crane M  
Ti: **A surveillance system for assessing health effects from hazardous exposures.**  
So: *Am J Epidemiol* 1990 Jul;132(1 Suppl):S32-42

A statistical procedure for monitoring the health status of a community potentially exposed to a hazardous environment is presented. It utilizes two levels of investigation. Level I studies monitor routinely collected vital statistics and routes of community exposure whereas level II studies require additional data collection and are further distinguished by their design and duration. In a level I study, routine vital statistics for specified end points over a specified period of time are monitored, and the observed number of events is compared with the expected number of events for a given population. The statistical model used with this procedure employs a two-step decision rule based on the standardized mortality ratio for the study community. An "alert status" is invoked when the number of events exceeds a prescribed excess. An "action status" is indicated if the excess noted in the initial period persists or if the observed number of events in the initial period greatly exceeds expectation. Should an "action status" be justified, level II studies to determine the likely explanation for the significant excess are initiated. This could include the conduct of a "case-control" study using the exposure data available from monitoring the community.

Address for reprint requests: University of Texas Health Sciences Center, School of Public Health, Houston, Texas

#### REFERENCE NUMBER 40

Au: Fiore BJ; Hanrahan LP; Anderson HA  
Ti: **State health department response to disease cluster reports: a protocol for investigation.**  
So: *Am J Epidemiol* 1990 Jul;132(1 Suppl):S14-22

State health departments are increasingly faced with the task of responding to reports of apparent cancer and other disease clusters. Since 1979, 141 requests for investigation have been received by the Wisconsin Division of Health, with over 60% of these requests occurring since 1985. Mounting public concern and limited resources have resulted in the development of a "disease cluster investigation and analysis protocol." Protocol steps include: (1) circumscribing the cluster; (2) ascertaining cases; (3) assessing risk of the exposed versus a referent population; (4) statistically analyzing disease rates; (5) examining potential exposure; (6) assessing biologic plausibility; (7) determining cluster significance and need for further investigation; and (8) reporting results. To demonstrate the protocol, the authors present a case example of an investigation of an apparent cancer cluster. Since 1979, 62 reports were resolved with initial contact with informant education (step 1), 61 reports required descriptive analysis (steps 1-8) with no site visit, and 18 reports required site visits. None of the reports required further in-depth epidemiologic investigation. This protocol provides a systematic approach to investigation and analysis, prioritizes the need for more in-depth study, and, when necessary, assuages community concerns when a disease cluster is reported.

Address for reprint requests: Section of Environmental and Chronic Disease Epidemiology, Wisconsin Department of Health and Social Services, Madison, Wisconsin 53701-0309

**REFERENCE NUMBER 41**

Au: Hanrahan LP; Mirkin I; Olson J; Anderson HA; Fiore BJ  
Ti: **SMRFIT: a Statistical Analysis System (SAS) program for standardized mortality ratio analyses and Poisson regression model fits in community disease cluster investigations.**  
So: *Am J Epidemiol* 1990 Jul;132(1 Suppl):S116-22

Increasingly, health departments are being pressed by the public to respond to disease risk with cluster investigations in communities and neighborhoods. This is a direct result of growing concern about the role that the environment may play in disease risk. While extensive analyses directly inputting exposures or numbers at risk are often necessary to thoroughly investigate clusters, it is quite useful to perform an exploratory analysis with existing morbidity and mortality data as a first level of response. To meet this need for timely evaluation, the authors describe a user-friendly Statistical Analysis System (SAS) program called SMRFIT to automate community disease cluster evaluations. The program creates frequency tables for number at risk and number of disease outcomes for the community, balance of parent county, and balance of state. SMRFIT then constructs standardized mortality ratios, with the community compared with balance of county and balance of state referents. Poisson regression is offered as an option for the modeling of community disease rates.

Address for reprint requests: Wisconsin Department of Health and Social Services, Madison, Wisconsin

**REFERENCE NUMBER 42**

Au: Woolf SH  
Ti: **The periodic health examination [letter; comment]**  
So: *J Am Coll Health* 1990 May;38(6):299

**REFERENCE NUMBER 43**

Au: Fassin D; Jeanne E  
Ti: **Risk groups and risk areas.**  
So: *World Health Forum* 1989;10(3-4):448-51

The risk approach to health management usually relates to groups of people. An alternative method is to concentrate on the areas at risk, which may sometimes be more useful in decision-making.

**REFERENCE NUMBER 44**

Au: Kumar D; Pfeffer J; Wingate DL  
Ti: **Role of psychological factors in the irritable bowel syndrome.**  
So: *Digestion* 1990;45(2):80-7

Our study was designed to test the hypothesis that psychoneurosis in irritable bowel syndrome (IBS) may be the secondary effects of the unsatisfactory nature of the medical transactions (diagnosis, explanation, prognosis, and therapy) in IBS rather than a primary cause of the syndrome. We carried out psychometric assessments on three groups of subjects: 10 healthy volunteers, 12 patients diagnosed as suffering from benign gastrointestinal disease, and 18 patients with IBS. We found a significantly raised incidence of psychoneurosis in IBS, but the components of this were predominantly anxiety and obsession; the incidence of depression in all 3 groups was similar. We argue that the data support our hypothesis that the psychoneurotic manifestations are secondary components of IBS; the data do not support the hypothesis that IBS is a manifestation of depression.

Address for reprint requests: Gastrointestinal Science Research Unit, London Hospital, UK

**REFERENCE NUMBER 45**

Au: de Melker RA; Touw-Otten F; Jacobs HM; Luttik A

Ti: **[Value of the sickness impact profile as outcome measure]**

So: *Ned Tijdschr Geneesk* 1990 May 12;134(19):946-8

Address for reprint requests: Rijksuniversiteit, Vakgroep Huisartsgeneeskunde, Utrecht, The Netherlands

**REFERENCE NUMBER 46**

Au: Hawkins JD; Catalano RF

Ti: **Broadening the vision of education: schools as health promoting environments.**

So: *J Sch Health* 1990 Apr;60(4):178-81

Address for reprint requests: Social Development Research Group, School of Social Work, University of Washington, Seattle, Washington 98195

**REFERENCE NUMBER 47**

Au: Sullivan M; Ahlmen M; Bjelle A

Ti: **Health status assessment in rheumatoid arthritis. I. Further work on the validity of the sickness impact profile.**

So: *J Rheumatol* 1990 Apr;17(4):439-47

In a cross-sectional, longitudinal study, 99 women with rheumatoid arthritis (RA) completed a well established health status measure, the Sickness Impact Profile (SIP), for diagnosis specific evaluation. Using traditional and self-reporting data, we examined SIP relationships that described physical functioning. They related closely to clinical measures. Psychosocial functioning measured by SIP related specifically to mental health and arthritic pain. Importantly, the SIP was sensitive to 1-year pre- and posttreatment changes showing both improvement and deterioration. When applied to patients with RA SIP categories could be more appropriately aggregated, e.g., Home management included in the Physical dimension and Communication omitted from the Psychosocial.

Address for reprint requests: Department of Medicine I/Health Care Research Unit, Gothenburg University, Gothenburg, Sweden

**REFERENCE NUMBER 48**

Au: Power C; Peckham C

Ti: **Childhood morbidity and adulthood ill health**

So: *J Epidemiol Community Health* 1990 Mar;44(1):69-74

**STUDY OBJECTIVE**—The aim of the study was to investigate the relationship between the state of health in childhood and ill health in early adult life. **DESIGN**—The study used data collected as part of the National Child Development Study and related health at 7 years of age to that at 23. A wide range of information on child health in the cohort was available, which was used to construct a broader measure of health status than selected diagnostic categories. **SETTING**—The survey population was nationwide. **PARTICIPANTS**—The study population included all children born in the week 3-9 March 1958. They were followed up at 7, 11, 16, and 23 years. Of the target population of 17,733 births, 12,537 (76%) were retraced and interviewed at 23. **MEASUREMENTS AND MAIN RESULTS**—Children at age 7 were allocated to 13 morbidity groups; 20% of children had reported no ill health apart from the common infectious diseases, but 10% were included in four or more of the morbidity groups. Children with no reported morbidity retained their health advantage into early adulthood: ratios of observed to expected ill health for four of the five indices examined at age 23 were all significantly below one (self-rated health 0.81, asthma and/or wheezy bronchitis 0.63, allergies 0.79, emotional health 0.75). Children with more

morbidity at age 7 had higher ratios of ill health in adulthood. A chronic condition in childhood was associated not only with excess morbidity in the short term but also with a poor health rating in early adult life (ratio = 1.38). Morbidity was significantly increased for most of the adulthood indices among children with asthma and/or wheezy bronchitis. However most ill health in young adulthood occurred in study members with a relatively healthy childhood. **CONCLUSIONS**—Although the state of health in childhood has long-term implications, it does not form a substantial contribution to ill health in early adult life.

Address for reprint requests: Social Statistics Research Unit, City University, Northampton Square, London

#### REFERENCE NUMBER 49

Au: Morris WW; Buckwalter KC; Cleary TA; Gilmer JS; Hatz DL; Studer M

Ti: **Refinement of the Iowa Self-Assessment Inventory.**

So: *Gerontologist* 1990 Apr;30(2):243-7

Two samples of older respondents (N=1,153 and N=420) were used in the refinement of the Iowa Self-Assessment Inventory (ISAI). Factor analyses based on data obtained from these samples resulted in modification of the original six-scale inventory to an inventory of seven scales: economic resources, anxiety/depression, physical health, alienation, mobility, cognitive status, and social support. The original ISAI was shortened from 120 to 56 items.

Address for reprint requests: College of Medicine, University of Iowa, Iowa City, Iowa 52242

#### REFERENCE NUMBER 50

Au: Harant J

Ti: **[Theoretical aspects of a study of total morbidity in the population]**

So: *Cesk Zdrav* 1990 Mar;38(3):97-106

Analysis of definitions of health, the borderline between health and disease, diagnostic criteria of health and disease, the relativity of health, the problem of nosology, nomenclature and statistical classification of diseases lead to the conclusion that criteria for assessment of the general morbidity of the individual or populations must be solved in a simplified manner with regard to the standard of contemporary knowledge and with regard to possibilities of the practical procedure. The most acceptable criterion for the limitation effect of health included under general morbidity in this concept is: diseases which call for medical care. Problems of methodological approaches to investigations of the general morbidity will be the subject of further articles.

Address for reprint requests: Ustav socialniho lekarstvi a organizace zdravotnictvi, Praha, Czechoslovakia

#### REFERENCE NUMBER 51

Au: Suttapreyasri D; Hiranraks A; Chaowanapreecha P; Temahiwongse T; Suntarajarn T; Watana S

Ti: **An evaluative instrument based on patient's perception of health for the monitoring of primary medical care in rural areas in Thailand.**

So: *J Med Assoc Thai* 1990 Jan;73(1):35-41

The evaluative instrument for the monitoring of primary medical care services in rural areas in Thailand, consisting of health risk, sickness-related dysfunction, health-specific coping index and health care of the patient's family, was developed and tested by 2,394 patients in the 4 regions. The patients had high health risk (70.8 +/- 14.0), high health-specific coping index (71.3 +/- 16.4), high health care of patient's family (76.1 +/- 10.0), and very low sickness-related dysfunction (13.4 +/- 15.6). The average time used for assessing the patients' perception of health was 37.9 minutes by sanitarians, 32.9 by midwives, 29.9 by

nurses and 24.8 by medical doctors. The reliability of the instrument was tested by paired interviewers; sanitarians and midwives, medical doctors and nurses, and was highly reliable for health risk and health-specific coping index. Language was the major obstacle in interviewing in the South.

Address for reprint requests: Faculty of Public Health, Mahidol University, Bangkok, Thailand

#### REFERENCE NUMBER 52

Au: Hubbell FA; Waitzkin H; Rodriguez FI

Ti: **Functional status and financial barriers to medical care among the poor.**

So: *South Med J* 1990 May;83(5):548-50

We compared the functional status of 94 poor patients with financial barriers to recommended medical care with that of 94 poor control patients without such barriers in a university-affiliated community clinic. Financial barriers existed when an insured patient's health insurance failed to cover recommended care or when an uninsured patient could not afford recommended care. Patients with financial barriers scored significantly lower than control subjects on the psychologic function/mental health component of the functional status questionnaire and tended to score lower on all other functional status measures. The results suggest that poor patients with financial barriers to recommended medical care may be sicker than other poor patients.

Address for reprint requests: Department of Medicine, University of California, Irvine, California

#### REFERENCE NUMBER 53

Au: Veras RP; da Silva SD; Souza CA; Milioli R; Ventura F

Ti: **[Methodologic proposal for a domiciliary survey of the aged population in an urban center of the State of Rio de Janeiro (Brazil)] (published erratum appears in *Rev Saude Publica* 1990 Apr;24(2):164)**

So: *Rev Saude Publica* 1989 Oct;23(5):429-38

The methodology used by a project being carried out at the Institute of Social Medicine, Rio de Janeiro, concerning the epidemiology of the elderly and the stages of the community survey are presented. The sampling methods and the steps of the enumerator process are also detailed.

#### REFERENCE NUMBER 54

Au: Ustinovich AK; Zubovich VK; Kolb VG; Danilchik VS; Dombrovskii Viu; et al.

Ti: **[Experience with the use of laboratory methods of comprehensively evaluating the state of health of newborn infants]**

So: *Lab Delo* 1990;(3):74-6

The authors offer new laboratory methods for comprehensive assessment of the health status of the newborns. Introduction of these methods in practical activity of clinical diagnostic laboratories of therapeutic and prophylactic institutions will promote early diagnosis of some diseases in the newborns and help comprehensively assess the neonates' adaptation potential, this being valuable for successful management of the babies.

**REFERENCE NUMBER 55**

Au: Chainé G; Cormier L; Moutillet M; Noreau L; Leblanc C; et al.

Ti: **Body mass index as a discriminant function among health-related variables and risk factors.**

So: *J Sports Med Phys Fitness* 1989 Sep;29(3):253-61

A group of 206 subjects (30-55 years) were studied with the objective of quantifying the relationships between fitness indicators (relative body weight (BMI), aerobic power, muscular endurance), health indicators and risk factors (appraised age, cost of health services consumed, blood pressure (SBP and DBP), blood lipids (CHO and HDL), cigarette smoking). BMI was significantly correlated with the risk indicators in the male sample (.302 less than or equal to  $r$  less than or equal to .364) and in the female sample (.217 less than or equal to  $r$  less than or equal to .521). All coefficients were in the direction of the established biological assumption as concerns hazards to health. The discriminant analysis revealed that in the total group of men, 77% ( $p$  less than or equal to .001) of the subjects could be classified either in high or low BMI (greater than  $Q_{75}$  or less than or equal to  $Q_{25}$ ) on the basis of the scores in SBP, HDL, HDL/CHO. In the subgroup of women greater than or equal to 40 years, statistically significant classification occurred in 100% of the cases ( $p$  less than or equal to .001) on the basis of DBP, CHO, HDL/CHO, NCIG. The results indicate that BMI is a fitness determinant which is valid, convenient, and easy to use in the detection of unfavorable health indices and when clinical intervention is justified.

**REFERENCE NUMBER 56**

Au: Alho JM

Ti: **Estimation of exposure time distributions.**

So: *Demography* 1990 May;27(2):313-21

In many demographic analyses, such as the assessment of environmental cancer risks, one may be interested not only in the age-by-state distribution of the population but also in the distribution of the population by time spent in a given state. States can represent geographic areas, marital statuses, labor force participation, or states-of epidemiologic exposure. Recursive formulas for the calculation of the distribution of the population according to exposure time are derived under time-invariant state transition rates. Although populations can have identical growth rates and identical age-by-state distributions, they can have very different distributions by exposure time. An application to the analysis of carcinogenic exposure states is given, using data from Finland. The effect of population heterogeneity on the estimated exposure time distributions is studied.

Address for reprint requests: Institute for Environmental Studies, University of Illinois, Urbana-Champaign 61801

**REFERENCE NUMBER 57**

Au: Maleckova J

Ti: **[Mortality and mean life span as an indicator of population health status]**

So: *Cesk Zdrav* 1990 Jan;38(1):15-23

The main source of data for the evaluation of the health status of the population is mortality statistics. The paper contains data on the standardized mortality and mean life span from the Annual World Health Report. The graphic presentation of data makes it possible to compare 15 selected European countries. In addition to the general mortality the cardiovascular mortality and the mortality from neoplasm are given. In the conclusion the author points out that the adverse health status of the Czechoslovak population must be improved not only by ensuring healthy living conditions but also by creating prerequisites for a change of the present lifestyle.

Address for reprint requests: Ustav zdravotnickych informaci a statistiky, Praha, Czechoslovakia



**REFERENCE NUMBER 58**

Au: Millward J  
Ti: **Relieving the pressure.**  
So: *Nurs Elder* 1990 Apr;2(4):14-6

**REFERENCE NUMBER 59**

Au: Pilon BA; Renfroe D  
Ti: **Evaluation of an employee health risk appraisal program.**  
So: *AAOHN J* 1990 May;38(5):230-5

1. After 2 years of employee participation, a computerized health risk assessment program managed by occupational health nurses was evaluated to determine whether health risk factor levels had undergone any significant change. 2. Data on 387 hospital employees were examined. Statistically significant reductions in risk factor levels were found for diastolic blood pressure, serum cholesterol, and smoking. The risk factor "weight" remained unchanged from year 1 to year 2 for both groups. 3. These findings suggest that the nursing interventions of focused, written feedback on risk factors, private counseling, and risk reduction education classes may have been important in motivating employees to make significant lifestyle changes.

**REFERENCE NUMBER 60**

Au: Pechora KL; Golubeva LG; Frukht EL; Pantiukhina GV  
Ti: **[Neurologic and mental development as an indicator of the health status of young children]**  
So: *Pediatrics* 1990;(1):99-100

**REFERENCE NUMBER 61**

Au: Marwick C  
Ti: **How do they conduct "N-HANES," anyway? [news]**  
So: *JAMA* 1990 May 16;263(19):2581

**REFERENCE NUMBER 62**

Au: Riggs S; Alario AJ; McHorney C  
Ti: **Health risk behaviors and attempted suicide in adolescents who report prior maltreatment.**  
So: *J Pediatr* 1990 May;116(5):815-21

We hypothesized that high school students who experienced prior maltreatment would be more likely than their peers to report health risk behaviors and suicide attempts. Before the establishment of a high school-based clinic, an anonymous needs assessment survey was completed by 600 adolescents (grades 9 to 12). Sociodemographic information was obtained and questions were asked about physical and sexual abuse, health-related behaviors and habits, and suicide attempts. Thirteen percent of the adolescents had been maltreated: 5.2% reported prior physical abuse, 5.4% sexual abuse, and 2.7% both physical and sexual abuse. Multivariate statistical techniques were used to clarify how previous abuse was related to adolescent risk-taking behaviors and suicide. Students with a history of physical abuse were three times more likely than non-abused peers to drink alcohol and smoke cigarettes, almost twice as likely to use illicit drugs, six times more likely to self-induce vomiting, and five times more likely to attempt suicide. A student with a history of prior sexual abuse had a three and one-half times greater chance of being sexually active and was more than three times more likely to attempt suicide. These data on a nonclinical, nondeviant population of adolescents indicate that physical or sexual abuse in childhood may have a significant impact on adolescent health risk behaviors and suicide attempts.

Address for reprint requests: Department of Pediatrics, Rhode Island Hospital, Providence, Rhode Island 02903

**REFERENCE NUMBER 63**

Au: Izmerov NF; Tkachev VV; Voitinskii AS

Ti: **[Economic evaluation of health-related effects of the improvement of working conditions]**

So: *Gig Tr Prof Zabol* 1990;(1):1-7

The importance of financial resources input into health improving goes without saying, and economic analysis can only contribute to the search and allocation of funds. The specific economic loss (SEL) seems to be a most informative index of the damage caused to economy by occupational diseases. This index includes the total sum of economic damage of the society through all the life of the worker after an occupational disease was diagnosed. The limits of SEL vary from 6.8 to 30 thousand rubles. A further elaboration of technical and legislative bases is needed to define the economic responsibility of enterprises for violating hygienic norms and regulations.

**REFERENCE NUMBER 64**

Au: Miniaev VA; Alekseeva LA; Zavalova LA

Ti: **[Effect of mass screening on various health indicators of the population and the activities of medical institutions]**

So: *Sov Zdravookhr* 1990;(1):33-7

The carrying-out of overall dispensarization is associated with considerable rise in the amount of medical care, since, among other things, there is a dramatic increase in the detection of diseases, the number of visits to curative and preventive establishments, and requirements in diagnostic means and curative and health-promoting activities. Under overall dispensarization at the territory divided into smaller units, the major amount of medical activity is fulfilled by territorial out-patient clinics and a district physician. However, the overall dispensarization at the territory divided into smaller units produces a considerable social and medical effect and provides for cost-effectiveness of its activities.

**REFERENCE NUMBER 65**

Au: Curtis SE; Taket AR; Thuriaux MC

Ti: **[Monitoring progress towards health for all in the European region of WHO IV. Changes in health systems]**

So: *Rev Epidemiol Sante Publique* 1990;38(1):19-26

This review deals with recent changes in health services development and support among the Member States of the European Region in response to changes in health indicators in the framework of the regional targets for health for all. Developments in research, in health legislation and in training which take into account the targets of health for all represent long-term actions; several countries mention efforts to increase community participation in the development and evaluation of health programs, efforts which must be actively pursued. Changes are perforce slow, and economic pressure represents both a challenge and a constraint.

Address for reprint requests: Queen Mary & Westfield College, Universite de Londres Mile End Road, U.K.

**REFERENCE NUMBER 66**

Au: Breslow L; Fielding J; Herrman AA; Wilbur, CS

Ti: **Worksite health promotion: its evolution and the Johnson & Johnson experience.**

So: *Prev Med* 1990 Jan;19(1):13-21

Worksite health promotion, a rapidly growing form of preventive health service, may include health risk appraisal with communication of findings to the individuals tested. It may also assist in achieving and maintaining physical and mental fitness, controlling alcohol use, avoiding or quitting tobacco and other drugs, and otherwise maintaining health protective habits, while providing opportunities to control high blood pressure, and reduce elevated blood cholesterol, obesity, and other health hazards. This article presents a synopsis of the evolution of that movement and reviews the experience of one industrial firm that has endeavored to document and evaluate its effort. Such a review may be helpful in consolidating the various findings to date and in indicating the complexity of assessing the health and economic consequences of such an endeavor in private companies.

Address for reprint requests: School of Public Health, University of California, Los Angeles, California 90024

**REFERENCE NUMBER 67**

Au: Ananov NI; Sergeev VN; Navrotskaia NI

Ti: **[Study of the effect of gymnastics on health indicators and work capacity of workers in an experimental shop of new anti-corrosion devices]**

So: *Gig Tr Prof Zabol* 1989;(8):44-6

Application of specially developed physical exercises (an interval for sports, sports minute, a microinterval for sports) and hygienic procedures at the end of the working day resulted in a more rapid restoration of work capacity and in decrease of fatigue in the main group both in the process of work and after office hours, compared to the control one.

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For the past 8 years NCHS has sponsored research to determine the feasibility of collecting data for multidimensional measures of health-related quality of life measures in national data sets and to explore the analytic potential of these measures. As a result of this interest, two studies have been undertaken, the first using data from the National Health Interview Survey (NHIS). Findings from this retrospective analysis of NHIS data indicated that multidimensional measures of health-related quality of life can be constructed from existing data (Erickson et al. 1988; Erickson et al. 1989). This led to the second study which used data from the 1982–1984 wave of the NHANES I Epidemiologic Followup Study (NHEFS) and evaluated the analytic potential of composite relative to traditional measures of health.

This issue of the *Bibliography on Health Indexes* initiates a series of brief reports on quality-of-life research in NCHS that has been fostered by these two studies. The first of these reports on the construction of the Health Utility Index, a health-related quality-of-life measure, using NHEFS data; E. Allen Kendall, Marjorie P. Odle, and George W. Torrance as well as Pennifer Erickson have developed this measure. Future issues of this series will discuss steps taken to validate the constructed measure, using both criterion and construct validity. Selected findings comparing the health status of persons with and without diabetes, hypertension, depression, and nutritional imbalances will be presented.

### **Survey Background**

The NHEFS was designed to investigate the association between factors measured in NHANES I, conducted from 1971 to 1975, with the development of specific health conditions (Cohen et al. 1987). The followup study population included the 14,407 participants who were 25–74 years of age when first examined in NHANES I. Unlike NHANES I, which had a comprehensive medical examination component, NHEFS is primarily an interview survey that relies on self-reporting of conditions. Two versions of the interview questionnaire were developed—the subject and the proxy questionnaires. The subject questionnaire was used when the respondent was alive at the time of the interview.

If a respondent was incapacitated or otherwise unable to take part in the interview, selected portions of the subject questionnaire were given to a proxy respondent. In general, only objective questions were asked of proxy respondents. Questions that related to feelings, opinions, or perceptions were omitted. The proxy questionnaire was administered only when a subject was deceased. In constructing our measure of health-related quality of life, we used only that information that was collected directly from respondents.

### **Construction of a Health-Related Quality of Life Measure**

After a thorough review of existing multidimensional measures, a Health Utility Index (HUI) was constructed using NHEFS data. The HUI consists of four attributes: Physical Activity and Mobility with six levels; Self-Care and Role Activity with five levels; Social-Emotional Function with four levels; and Health Problems with eight levels. Each individual is classified into one level on each attribute. A score that reflects the health-related quality of life of each individual is obtained by using available preference weights with a multiplicative formula for combining data from the four attributes (Torrance 1987).

After selecting the quality of life measure to construct, the next step was to carefully map data collected in the NHEFS questionnaire into each function level in the Health Utility Index. The NHEFS questionnaire was thoroughly reviewed to identify those items that asked about concepts similar to those included in the HUI. The following table shows the matching of one Physical Function level component and questions from the NHEFS questionnaire.

Table  
An example of the match between one function level component  
of the HUI and the NHEFS questionnaire

Item No.	Descriptor	
HUI1:	Do you need help from another person in order to get around the house, yard, neighborhood, or community?	
NHEFS Questions and Responses		
F1:	Are you usually confined to bed for most of the day?	
	yes	1
	no	2
	inapplicable*	7
	don't know	8
	not ascertained	9
F11a:	Do you have difficulty walking a quarter mile (two or three blocks)?	
	no difficulty	1
	some difficulty	2
	much difficulty	3
	unable to do	4
	inapplicable*	7
	don't know	8
	not ascertained	9
F12a:	Do you have difficulty walking from room to room?	
	no difficulty	1
	some difficulty	2
	much difficulty	3
	unable to do	4
	inapplicable*	7
	don't know	8
	not ascertained	9
F25a:	Do you have difficulty running errands and shopping?	
	no difficulty	1
	some difficulty	2
	much difficulty	3
	unable to do	4
	inapplicable*	7
	don't know	8
	not ascertained	9

\* Subject is not bedridden (interviewer observation) or proxy questionnaire.

In this table, HUI1 refers to one of the HUI function levels that are used to classify a respondent according to his or her mobility status. In reviewing the NHEFS questionnaire, we found four questions, F1, F11a, F12a, and F25a, that addressed the same concept as that in HUI1. These four questions along with the possible responses are listed in this table.

For some of levels within the four HUI attributes NHEFS had no matching items. For a few items, respondents failed to respond. In these cases of missing data, respondents were assumed to have no dysfunction. Although this assumption biases the constructed scores upward, i.e., makes the population appear healthier than it actually is the bias is small because of the infrequency of the missing data.

NHEFS questions were then combined to classify each respondent as either functional or dysfunctional to each of the levels. When a person could be classified as dysfunctional in more than one level within an attribute, he or she was classified to the level that represented more dysfunction. The following logic illustrates how the NHEFS questions shown above were combined to indicate whether a person was able to get around without help from another person. New item numbers, HUI-1, HUI-2, HUI-3, and HUI-4, are used to represent the binary variables that are constructed from the original NHEFS data.



HUI1-1=0: No (=2,7,8,9) to F1 == > not confined to bed  
1: Yes (=1) to F1 == > confined to bed

HUI1-2=0: No or some difficulty (=1,2,8,9) to F25a  
1: Much difficulty or unable (=3,4,7) to F25a

HUI1-3=0: No or some difficulty (=1,2,8,9) to F12a  
1: Much difficulty or unable (=3,4) to F12a

HUI1-4=0: Not applicable (=7) to F12a AND  
No or some difficulty (=1,2,8,9) to F11a

HUI1=0 if HUI-1=0 AND HUI-2=0 AND (HUI-3 OR HUI-4=0)  
HUI1=1 otherwise

0 = > Able to get around without help from another person.

1 = > Needs help from another person to get around.

This process of matching questions and their responses in order to develop an indicator of dysfunction was done for each of the levels within the four attributes of the HUI for each respondent. These indicators were used to assign each NHEFS respondent into one level in each attribute. From this, it was possible to calculate a health status score that combined the information on the four attributes into a single score that represented the health, or health-related quality of life of each respondent.

The next RESEARCH ROUNDTABLE will discuss how the scores for the levels within each attribute were validated and combined to form an overall measure of health-related quality of life. Construct validation has been used to determine the relationships between the overall scores and demographic variables as well as other health status variables such as self-reported health status.

### Why “Indexes”?

In the health field the terms “index” and “indicator” have been used interchangeably when the primary measure of health status was a single measure such as a mortality rate or life expectancy. More recently, however, research efforts have focused on developing composite measures that reflect the positive side of health as well as changing disease and death patterns. Progress is being made, and the resultant health status measures are being applied. Although the measures have become more complex, the terms “index” and “indicator” are still used interchangeably. In providing information to assist in the development of composite health measures, the Clearinghouse has adopted the following definition: a health index is a measure which summarizes data from two or more components and which purports to reflect the health status of an individual or defined group.

### Why a “Clearinghouse”?

It has become apparent that different health indexes will be necessary for different purposes; a single GNP-type index is impractical and unrealistic. Public interest coupled with increased government financing of health care has brought new urgency for health indexes. Their development can be hastened through active communications; the Clearinghouse was established to provide a channel for these communications.

### What’s Included?

The selection of documents for the Clearinghouse focuses on efforts to develop and/or apply composite measures of health status. A reprint or photocopy of each selection is kept on file in the Clearinghouse. Domestic and foreign sources of information will include the following types of published and unpublished literature: articles from regularly published journals; books, conference proceedings, government publications, and other documents with limited circulation; speeches and unpublished reports of recent developments; and reports on grants and contracts for current research. The Clearinghouse will systematically search current literature and indexes of literature to maintain an up-to-date file of documents and retrospectively search to trace the development of health indexes. Specifically, items will be included if they

1. advance the concepts and definitions of health status by
  - a) operationalizing the definition
  - b) deriving an algorithm for assigning weights
  - c) computing transitional probabilities
  - d) validating new measures
2. use composite measure(s) for the purpose of
  - a) describing or comparing the health status of two or more groups
  - b) evaluating a health care delivery program
3. involve policy implications for health indexes
4. review the state of the art
5. discuss a measure termed “health index” by the author

### What Services?

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