

Permanente Abstracts

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Association of Hostility with Coronary Artery Calcification in Young Adults: the CARDIA Study. Coronary Artery Risk Development in Young Adults

Iribarren C; Sidney S; Bild DE; et al. JAMA 2000 May 17;283(19):2546-51.

CONTEXT: Psychosocial factors, including personality and character traits, may play a role in the development and expression of coronary artery disease.

OBJECTIVE: To evaluate whether hostility, a previously reported predictor of clinical coronary artery disease, is associated with coronary calcification, which is a marker of subclinical atherosclerosis.

DESIGN: Prospective cohort study.

SETTING AND PARTICIPANTS: Volunteer subsample from Chicago, IL, and Oakland, CA, consisting of 374 white and black men and women, aged 18 to 30 years at baseline, who participated in the Coronary Artery Risk Development in Young Adults (CARDIA) study. Cook-Medley hostility assessment data were collected at baseline from 1985 to 1986 and at year five examinations from 1990 to 1992. After the ten-year examinations in the 1995-1996 year, electron-beam computed tomographic scans were performed.

MAIN OUTCOME MEASURES: Presence of any detectable coronary artery calcification (coronary calcium score >0), and coronary artery calcium scores of 20 or higher.

RESULTS: In logistic regression analysis adjusting for age, sex, race, and field center comparing those with hostility scores above and below the median of the distribution of the present sample, the odds ratio of having any coronary calcification was 2.57 (95% confidence interval, 1.31-5.22), and the odds ratio of having a calcium score of 20 or higher was 9.56 (95% confidence interval, 2.29-65.9) for calcium scores of 20 or higher. The associations with any coronary artery calcification persisted after adjusting for demographic, lifestyle, and physiological variables. Results using a cynical distrust subscale were somewhat weaker than for those using the global hostility score. Power was inadequate to perform sex- or race-specific analyses.

CONCLUSION: These results suggest that a high hostility level may predispose young adults to coronary artery calcification.

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Calcification of the Aortic Arch: Risk Factors and Association with Coronary Heart Disease, Stroke, and Peripheral Vascular Disease

Iribarren C; Sidney S; Sternfeld B; Browner WS. JAMA 2000 Jun 7;283(21):2810-5.

CONTEXT: Calcium deposits in coronary and extracoronary arterial beds may indicate the extent of atherosclerosis. However, the incremental predictive value of vascular calcification, beyond traditional coronary risk factors, is not clearly established.

OBJECTIVE: To evaluate risk factors for aortic arch calcification and its long-term association with cardiovascular diseases in a population-based sample.

DESIGN AND SETTING: Cohort study conducted at a health maintenance organization in Northern California.

PARTICIPANTS: A total of 60,393 women and 55,916 men, aged 30 to 89 years at baseline who attended multiphasic health checkups between 1964 and 1973 and for whom incidence of hospitalizations and/or mortality data were ascertained using discharge diagnosis codes and death records through December 31, 1997 (median follow-up, 28 years).

MAIN OUTCOME MEASURE: Hospitalization for or death due to coronary heart disease, ischemic stroke, hemorrhagic stroke, or peripheral vascular disease, as associated with aortic arch calcification found on chest radiograph at checkup from 1964-1973.

RESULTS: Aortic arch calcification was present in 1.9% of men and 2.6% of women. It was independently associated with older age, no college education, current smoking, and hypertension in both sexes, but it was inversely related to body mass index and family history of myocardial infarction. In women, aortic arch calcification was also associated with black race and elevated serum cholesterol level. After adjustment for age, educational attainment, race/ethnicity, cigarette smoking,

alcohol consumption, body mass index, serum cholesterol level, hypertension, diabetes, and family history of myocardial infarction, aortic arch calcification was associated with an increased risk of coronary heart disease (in men, relative risk [RR], 1.27; 95% confidence interval [CI], 1.11-1.45; in women, RR, 1.22; 95% CI, 1.07-1.38). Among women, it was also independently associated with a 1.46-fold increased risk of ischemic stroke (95% CI, 1.28-1.67).

CONCLUSION: In our population-based cohort, aortic arch calcification was independently related to coronary heart disease risk in both sexes as well as to ischemic stroke risk in women.

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Ethnic Differences in Pulmonary Function in Healthy Nonsmoking Asian-Americans and European-Americans.

Korotzer B; Ong S; Hansen JE. Am J Respir Crit Care Med 2000 Apr;161(4 Pt 1):1101-8.

We investigated ethnic differences in spirometry and gas transfer (DL(CO)) in a young, healthy population of nonsmoking physicians and medical students aged 22-33 years, of European or Asian descent. Each answered questions detailing ethnic background, medical history, level of physical activity, and length of residence in the United States. Spirometry and single-breath DL(CO) maneuvers were performed in accordance with ATS standards. Venous blood was measured for hemoglobin (Hb). The same equipment was used to test all subjects. Data were analyzed by multiple linear regression. Eighty subjects were studied, with 20 in each of the following groups: European male, European female, Asian male, and Asian female. Asian values for forced vital capacity, forced expiratory volume in 1 s (FEV(1)), and alveolar volume (VA') were significantly lower than for Europeans, but DL(CO), DL(CO)/VA', and DL(CO)/VA'/Hb did not differ significantly. These differences could not be attributed to age, length of residence in the United States, activity level, or variance in baseline



characteristics and anthropometric measurements, and therefore represent a true physiologic difference. Ethnic differences between individuals of Asian and European backgrounds should be considered when interpreting pulmonary function tests, especially when predicted values are based on populations of European descent.

Official Journal of the American Thoracic Society.

Risk of Pulmonary Embolism and/or Deep Venous Thrombosis in Asian-Americans

Klatsky AL; Armstrong MA; Poggi J. Am J Cardiol 2000 Jun 1;85(11):1334-7.

Several reports from Asian countries suggest a low prevalence of pulmonary embolism (PE) and deep venous thrombosis (DVT) in Asians, and sparse US data show that a slightly higher prevalence of PE/DVT in "nonwhites" than in whites is evident in all geographic regions except the Pacific region (California, Oregon, and Washington) where "nonwhites" include a larger proportion of Asians and Hispanics than in other US locations. We prospectively studied PE/DVT hospitalizations in 128,934 persons in relation to traits determined at health examinations in 1978 to 1985. Through 1994, 337 persons were subsequently hospitalized for PE and/or DVT (for PE first, $n = 206$). Cox proportional-hazards models with nine covariates were used. In multivariate models, the following RRs (95% confidence intervals) were found for PE/DVT combined: black/white = 1.1 (0.4 to 1.4); Hispanic/white = 0.7 (0.3 to 1.5); and Asian/white = 0.2 (0.1 to 0.5; $p = 0.002$). The lower risk of Asians was present in each sex and for persons first hospitalized for either PE or DVT. Covariates with significant positive relations to risk were age, male sex, body mass index, and a composite coronary disease risk/symptom variable; covariates not significantly related were education, marital status, smoking, and alcohol. These data suggest that Asians have very low risk of PE/DVT, which may account for US geographic variations in white/non-white risk differences. Possible explanations include the absence of hazardous

mutations or unspecified PE/DVT protective traits in Asians.

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Self-Monitoring of Blood Glucose: Language and Financial Barriers in a Managed Care Population with Diabetes

Karter AJ; Ferrara A; Darbinian JA; Ackerson LM; Selby JV. Diabetes Care 2000 Apr;23(4):477-83.

OBJECTIVE: Self-monitoring of blood glucose (SMBG) is a cornerstone of diabetes care, but little is known about barriers to this self-care practice.

RESEARCH DESIGN AND METHODS: This cross-sectional study examines SMBG practice patterns and barriers in 44,181 adults with pharmacologically treated diabetes from the Kaiser Permanente Northern California Region who responded to a health survey (83% response rate). The primary outcome is self-reported frequency of SMBG.

RESULTS: Although most patients reported some level of SMBG monitoring, 60% of those with type 1 diabetes and 67% of those with type 2 diabetes reported practicing SMBG less frequently than recommended by the American Diabetes Association (three to four times daily for type 1 diabetes, and once daily for type 2 diabetes treated pharmacologically). Significant independent predictors of nonadherent practice of SMBG included longer time since diagnosis, less intensive therapy, male sex, age, belonging to an ethnic minority, having a lower education and neighborhood income, difficulty communicating in English, higher out-of-pocket costs for glucometer strips (especially for subjects with lower incomes), smoking, and excessive alcohol consumption.

CONCLUSIONS: Considerable gaps persist between actual and recommended SMBG practices in this large managed care organization. A somewhat reduced SMBG frequency in subjects with linguistic barriers,

some ethnic minorities, and subjects with lower education levels suggests the potential for targeted, culturally sensitive, multilingual health education. The somewhat lower frequency of SMBG among subjects paying higher out-of-pocket expenditures for strips suggests that removal of financial barriers by providing more comprehensive coverage for these costs may enhance adherence to recommendations for SMBG.

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Predictors of Glycemic Control in Insulin-Using Adults with Type 2 Diabetes

Nichols GA; Hillier TA; Javor K; Brown JB. Diabetes Care 2000 Mar;23(3):273-7.

OBJECTIVE: To determine the characteristics that influence glycemic control among insulin-using adults with type 2 diabetes.

RESEARCH DESIGN AND METHODS: We studied all 1333 eligible members of a large not-for-profit health maintenance organization who responded to a 1997 survey. We tested associations among demographic, treatment, and psychometric variables with mean 1997 HbA1c values. The Problem Areas in Diabetes (PAID) instrument was used to assess the emotional effect of living with diabetes, and the Short Form 12 Physical Function Scale was used to assess the effect of physical limitations on daily activities. Based on differences between and within treatment groups, we built models to predict glycemic control for subgroups of subjects who were using insulin alone and those who were using insulin in combination with an oral hypoglycemic agent.

RESULTS: Younger age, lower BMI, and increased emotional distress about diabetes (according to the PAID scale) were all significant predictors ($P < 0.05$) of worse glycemic control. However, except among individuals with an HbA1c level of > 8.0 who were receiving combination therapy, only approximately 10% of the variance in glycemic control could be predicted by demographic, treatment, or psychometric characteristics.

CONCLUSIONS: Personal characteristics explain little of the variation in glycemic



control in insulin-using adults with type 2 diabetes. Possible explanations are that the reduced complexity of control in type 2 diabetes makes the disease less sensitive to personal factors than control in type 1 diabetes, that health-related behavior is less driven by personal and environmental characteristics among older individuals, or that, in populations exposed to aggressive glycemic control with oral hypoglycemic agents and nurse care managers, personal differences become largely irrelevant.

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Evaluation of the Effect of Performance Monitoring and Feedback on Care Process, Utilization, and Outcome

Petitti DB; Contreras R; Ziel FH; Dudl J; Domurat ES; Hyatt JA. Diabetes Care 2000 Feb;23(2):192-6.

OBJECTIVE: We evaluated a program of performance measurement and monitoring by assessing care process, utilization of services, and outcomes.

RESEARCH DESIGN AND METHODS: Information on 63,264 diabetic individuals who were continuously enrolled as members of Kaiser Permanente Southern California from 1 January 1994 to 31 December 1997 was used to evaluate the program. Time trends in testing for glycemic test and control and screening for dyslipidemia, use of lipid-lowering drugs, and microalbuminuria were evaluated as measures of care process. Time trends in hospitalization, outpatient appointments, prescriptions, and laboratory tests were evaluated as measures of utilization. Outcomes were hospitalization for myocardial infarction, ischemic stroke, and lower-limb amputation.

RESULTS: Between 1994 and 1997, improvements were evident in the process measures. The mean number of hospitalizations and the mean and median number of outpatients visits did not change. The mean number of laboratory tests increased from 13.2 in 1994 to 23.6 in 1997. The mean number of prescriptions for any medication increased from 19.7 to 24.3. Hospitalization rates for myocardial infarction did not change, but rates increased for ischemic stroke and lower-limb amputation.

CONCLUSIONS: Our findings suggest that measurement and monitoring of clinical performance can bring about modest improvements in measures of the processes of care in the absence of financial incentives, centrally driven interventions, and specialty care for all patients. In our setting, process improvements were associated with higher utilization of laboratory services and more prescriptions without an immediate return in terms of lower hospital utilization.

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Maternal Pre-Eclampsia/Eclampsia and the Risk of Sudden Infant Death Syndrome in Offspring

Li DK; Wi S. Paediatr Perinat Epidemiol 2000 Apr;14(2):141-4.

To determine whether maternal exposure to pre-eclampsia/eclampsia during pregnancy increases the risk of sudden infant death syndrome (SIDS) in offspring, we conducted a population-based case-control study using the California linked birth and death certificate data. All infants who died of SIDS (ICD-9 code 798.0) during 1989-91 were identified as cases. More than 96% of the identified SIDS cases were diagnosed through autopsy. Ten controls who did not die from SIDS were randomly selected for each case from the birth certificate matched to the case on the year of birth. Among 2029 cases and 21,037 controls included in the final analysis, mothers of 49 cases (2.4%) and 406 controls (1.9%) had a diagnosis of either pre-eclampsia or eclampsia noted on the birth certificate. After adjustment for maternal age, prenatal smoking, race/ethnicity, parity, maternal education, gestational age at the initial visit for prenatal care, infant year of birth and infant sex, maternal pre-eclampsia/eclampsia during pregnancy was associated with a 50% increased risk of SIDS in the offspring (odds ratio = 1.5, 95% confidence interval 1.1, 2.0). Potential under-reporting of pre-eclampsia/eclampsia on the birth certificates was likely to be non-differential and is unlikely to explain the finding. Fetal hypoxia

resulting from pre-eclampsia/eclampsia or immunological aetiology affecting the risk of both pre-eclampsia/eclampsia and SIDS may explain the finding.

A Randomized Comparison of Home and Clinic Follow-Up Visits After Early Postpartum Hospital Discharge

Lieu TA; Braveman PA; Escobar GJ; et al. Pediatrics 2000 May;105(5):1058-65.

BACKGROUND: Recently enacted federal legislation mandates insurance coverage of at least 48 hours of postpartum hospitalization, but most mothers and newborns in the United States will continue to go home before the third postpartum day. National guidelines recommend a follow-up visit on the third or fourth postpartum day, but scant evidence exists about whether home or clinic visits are more effective.

METHODS: We enrolled 1163 medically and socially low-risk mother-newborn pairs with uncomplicated delivery and randomly assigned them to receive home visits by nurses or pediatric clinic visits by nurse practitioners or physicians on the third or fourth postpartum day. In contrast with the 20-minute pediatric clinic visits, the home visits were longer (median: 70 minutes), included preventive counseling about the home environment, and included a physical examination of the mother. Clinical utilization and costs were studied using computerized databases. Breastfeeding continuation, maternal depressive symptoms, and maternal satisfaction were assessed by means of telephone interviews at two weeks' postpartum.

RESULTS: Comparing the 580 pairs in the home visit group and the 583 pairs in the pediatric clinic visit group, no significant differences occurred in clinical outcomes as measured by maternal or newborn re-hospitalization within ten days postpartum, maternal or newborn urgent clinic visits within ten days postpartum, or breastfeeding discontinuation or maternal depressive symptoms at the two-week interview. The same was true for a combined clinical outcome measure indicating whether a mother-newborn pair had any of the above



outcomes. In contrast, higher proportions of mothers in the home visit group rated as excellent or very good the preventive advice delivered (80% vs 44%), the provider's skills and abilities (87% vs 63%), the newborn's posthospital care (87% vs 59%), and their own posthospital care (75% vs 47%). On average, a home visit cost \$255 and a pediatric clinic visit cost \$120.

CONCLUSIONS: For low-risk mothers and newborns in this integrated health maintenance organization, home visits compared with pediatric clinic visits on the third or fourth postpartum hospital day were more costly, but were associated with equivalent clinical outcomes and markedly higher maternal satisfaction. This study had limited power to identify group differences in rehospitalization, and may not be generalizable to higher-risk populations without comparable access to integrated hospital and outpatient care.

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Papanicolaou Smear History and Diagnosis of Invasive Cervical Carcinoma among Members of a Large Prepaid Health Plan

Sung HY; Kearney KA; Miller M; Kinney W; Sawaya GF; Hiatt RA. Cancer 2000 May 15;88(10):2283-9.

BACKGROUND: Despite the widespread use of Papanicolaou (Pap) smear screening, substantial morbidity and mortality from cervical carcinoma continue in the US. Although access to screening is a major barrier to use of the Pap smear, invasive cervical carcinoma (ICC) still is observed in health plan members who have comprehensive preventive care coverage.

METHODS: For all women diagnosed with ICC between 1988 and 1994 in a large prepaid health plan, the authors retrospectively reviewed the medical records for prediagnosis Pap smear history to identify antecedents to ICC.

RESULTS: Of 642 women diagnosed as having ICC, 455 (71%) had been plan members for ≥ 30 of the 36 months before diagnosis. Of these 455 women, 240 (53%) had no Pap smear during the 6-36 months prior to

diagnosis (ie, were nonadherent to screening), 127 (28%) had only "normal" Pap smear results, 42 (9%) had at least one abnormal Pap smear and were adequately followed, 17 (4%) had at least one abnormal result without adequate follow-up, and 29 (6%) were classified as "other." Compared with adherent women, more nonadherent women presented with later stage disease, were symptomatic at the time of diagnosis, were older, and were of a race/ethnicity other than non-Hispanic white.

CONCLUSIONS: Nonadherence to screening recommendations was found to be the most important modifiable antecedent to ICC in this population. The rate of incidence of ICC could be reduced by interventions to increase screening in women who do not have Pap smears regularly and by the use of newer screening technologies to reduce the false-negative rate of Pap smears.

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The North American Menopause Society 1998 Menopause Survey: Part II. Counseling about Hormone Replacement Therapy: Association with Socioeconomic Status and Access to Medical Care

Ettinger B; Woods NF; Barrett-Connor E; Pressman A. Menopause 2000 May-Jun; 7(3):143-8.

OBJECTIVE: The purpose of this study was to examine two predictors of women obtaining hormone replacement therapy (HRT) counseling: socioeconomic status and access to health care.

DESIGN: During May-July 1998, by means of random-digit telephone dialing, 749 postmenopausal women who were living in the United States and aged 50-65 years were interviewed. On average, they were 56.8 years and 11.8 years postmenopausal. Most (86.0%) were Caucasian, and their median annual income was approximately \$40,000. Nearly all (90.8%) had medical insurance coverage; 47.6% of those insured received care from a managed care organization. Access to medical care was evidenced by

92.3% being under the care of a primary care physician, 92.3% ever having had a mammogram, 96.9% ever having had a pelvic examination, and 91.1% ever having had a serum cholesterol determination.

RESULTS: Of these 749 women, 75.4% reported that they had received counseling about post-menopausal HRT from healthcare providers. Both level of education and level of income were associated with an increased likelihood that HRT counseling would be obtained. Having a personal physician, and particularly receiving care from a gynecologist, increased the likelihood that counseling would be available. There were no substantial differences in counseling frequency between women in managed care plans and those having other types of health insurance. In a multivariate model, adjusted odds ratios for receiving HRT counseling were 2.9 (95% confidence interval [CI] = 1.7-4.8) for having an annual income of \$50,000 or more versus less than \$30,000, 2.8 (95% CI = 1.7-4.5) for receiving care from a gynecologist versus other primary care physician, 1.9 (95% CI = 1.1-3.2) for being Caucasian versus not, and 1.5 (95% CI 1.0-2.2) for having a hysterectomy versus not.

CONCLUSIONS: Three quarters of a sample of US postmenopausal women aged 50-65 years reported that they had been counseled about HRT. However, women of lowest socioeconomic status and those who did not have a primary care physician were least likely to have received counseling. No differences were observed in prevalence of counseling between women in managed care settings and those with other types of health insurance. The findings suggest that special efforts are necessary to provide menopause education and counseling to underserved women.

Efficacy of Pneumococcal Conjugate Vaccines in Large Scale Field Trials.

Shinefield HR; Black S. Pediatr Infect Dis J 2000 Apr; 19(4):394-7.

BACKGROUND: Each year Streptococcus pneumoniae causes approximately 1.2 million deaths worldwide from pneumonia. In the United States S. pneumoniae is esti-



mated to cause 500,000 cases of pneumonia and seven million episodes of acute otitis media annually.

CONJUGATE VACCINES: The current pneumococcal polysaccharide vaccine is ineffective in children <2 years old and may not produce an adequate antibody response until children reach the age of five years. Pneumococcal conjugate vaccines are immunogenic after primary and booster vaccination in young children and in children and adults with immunodeficiencies. Immunization with conjugate vaccines also induces a strong and rapid anamnestic response and enhanced functional activity of antibodies. Two large scale field trials of pneumococcal conjugate vaccines were initiated in 1995, one in California and one in Finland. The California trial, involving 37,868 children, evaluated the efficacy of a 7-valent conjugate for the prevention of invasive pneumococcal disease and secondarily evaluated its efficacy for acute otitis media and pneumonia.

RESULTS: Preliminary results indicate 94% efficacy against invasive pneumococcal disease caused by serotypes included in the vaccine in fully or partially vaccinated children. Preliminary evidence from large scale field trials indicates that pneumococcal conjugate vaccines are effective in reducing invasive pneumococcal disease as well as acute otitis media and pneumonia in children and represents a significant advance in the prevention of childhood infectious diseases.

Following Depression in Primary Care: Do Family Practice Physicians Ask about Depression at Different Rates Than Internal Medicine Physicians?

Nichols GA; Brown JB. *Arch Fam Med* 2000 May;9(5):478-82.

OBJECTIVE: To determine whether the chronically or recurrently depressed patients of family practice and internal medicine physicians differed in the proportion reporting that their primary care physician asked them about depression symptoms.

DESIGN: A cross-sectional observational study of chronically or recurrently depressed survey respondents who identified a family practice or internal medicine physician as their primary care provider.

SETTING: A large not-for-profit group-model health maintenance organization in the northwestern United States, with a population representative of its service area.

PATIENTS: Health maintenance organization members (n = 1161) with ongoing or recurring depression or dysthymia who responded to a 1993 survey and who identified either a family practice or internal medicine physician as their primary care provider.

MAIN OUTCOME MEASURE: Patients' self-report of their primary care physician asking them: (1) whether they had been feeling sad, blue, or depressed; (2) to fill out a questionnaire about their mood or feelings; and (3) whether they had been thinking about death or suicide.

RESULTS: Chronically or recurrently depressed patients of family practice physicians were more likely to report that their physician asked them about depressive symptoms than were patients of internal medicine physicians (34.0% vs 27.3%) (P=.02). This finding persisted in a multivariate analysis.

CONCLUSION: Family practice physicians may be more attentive to depressive disorders than internal medicine physicians.

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Can Percent Free Prostate-Specific Antigen Reduce the Need for Prostate Biopsy?

Lieberman S. *Eff Clin Pract* 1999 Nov-Dec;2(6):266-71.

BACKGROUND: In a recent multicenter study, percent free prostate-specific antigen (PSA) enhanced the specificity of PSA testing in prostate cancer screening.

OBJECTIVE: To determine whether the percent free PSA could be as effective in reducing the need for biopsy in a managed care setting as in an academic setting.

SETTING: Kaiser Permanente Northwest Region (Portland, Oregon) and Kaiser Permanente Oakland/Berkeley (California).

DESIGN: Prospective blinded study conducted by using Hybritech Tandem PSA and Hybritech Tandem free PSA assays (Beckman Coulter, Inc, Fullerton, California).

PARTICIPANTS: 250 men (63 with prostate cancer and 187 with benign prostate conditions) who were older than 40 years of age, had a PSA level of 4.0 to 10.0 ng/mL, and had a histologically confirmed diagnosis.

MAIN OUTCOME MEASURES: Sensitivity and specificity of percent free PSA.

RESULTS: The median percent free PSA values for patients with cancer (free PSA, 13%) significantly differed from that for patients without cancer (free PSA, 17%) (P = 0.001). When a free PSA cutoff of 25% was used, the sensitivity was 97% (95% CI, 92% to 100%) and the specificity was 13% (CI, 8% to 18%). These results were not significantly different from those obtained in the multicenter study (95% sensitivity, 20% specificity for a free PSA cutoff of 25%).

CONCLUSION: The results obtained in a managed care organization were similar to those obtained at large university medical centers and show that the percent free PSA can be used to enhance the specificity of PSA testing for prostate cancer. ♦