Permanente Abstracts

Evaluating Hypertension Control in a Managed Care Setting

Alexander M, Tekawa I, Hunkeler E, Fireman B, Rowell R, et al. Arch Intern Med 1999 Dec 13-27;159(22):2673-7.

Background: We conducted a retrospective cohort study on a random sample of adult patients with hypertension in a large health maintenance organization to assess the feasibility of documenting blood pressure (BP) control and to compare different measures for defining BP control.

Methods: Three criteria for BP control were assessed: systolic BP less than 140 mm Hg; diastolic BP less than 90 mm Hg; and combined BP control, with systolic BP less than 140 mm Hg and diastolic BP less than 90 mm Hg. Four methods of assessing hypertension control by the above criteria were examined: proportion of patients with BP under control at 75% and 50% or more of their office visits; the mean of all pressures during the study period; and the BP from the last visit during the study period.

Results: The proportion of patients meeting each criterion for control was similar whether we used the mean BP for all visits, the last recorded BP, or control at 50% or more of visits. Control rates were substantially lower when the more stringent assessment, 75% of visits, was used. The proportion of patients with combined BP control at 75% or more of their visits was half that of the other methods.

Conclusions: In this health maintenance organization population, results with the use of the simplest approach, the last BP measurement recorded, were similar to results with the mean BP. Our findings indicate that evaluation of BP control in a large health maintenance organization will find substantial room for improvement, and clinicians should be encouraged to be more aggressive in their management of hypertension, especially with regard to the systolic BP, which until recent years has been underemphasized.

Diabetes Management in a Health Maintenance Organization. Efficacy of Care Management Using Cluster Visits

Sadur CN, Moline N, Costa M, Michalik D, Mendlowitz D, et al. Diabetes Care 1999 Dec 22(12):2011-7.

Objective: To evaluate the effectiveness of a cluster visit model led by a diabetes nurse educator for delivering outpatient care management to adult patients with poorly controlled diabetes.

Research design and methods: This study involved a randomized controlled trial among patients of Kaiser Permanente's Pleasanton, CA, center who were aged 16-75 years and had either poor glycemic control (HbA_{1c} > 8.5%) or no HbA_{1c} test performed during the previous year. Intervention subjects received multidisciplinary outpatient diabetes care management delivered by a diabetes nurse educator, a psychologist, a nutritionist, and a pharmacist in cluster visit settings of 10-18 patients/month for six months. Outcomes included change (from baseline) in HbA_{1c} levels; self-reported changes in self-care practices, self-efficacy, and satisfaction; and utilization of inpatient and outpatient health care.

Results: After the intervention, HbA_{1c} levels declined by 1.3% in the intervention subjects versus 0.2% in the control subjects ($p < 0.0001$). Several self-care practices and several measures of self-efficacy improved significantly in the intervention group. Satisfaction with the program was high. Both hospital ($p = 0.04$) and outpatient ($p < 0.01$) utilization were significantly lower for intervention subjects after the program.

Conclusions: A six-month cluster visit group model of care for adults with diabetes improved glycemic control, self-efficacy, and patient satisfaction and resulted in a reduction in health care utilization after the program.

Lack of Correlation of Symptoms with Specialist-Assessed Long-Term Asthma Severity

Osborne ML, Vollmer WM, Pedula KL, Wilkins J, Buist AS, O'Hollaren M, Chest 1999 Jan;115(1):85-91.

Study objectives: To validate three indicators of asthma severity as defined in the National Asthma Education Program (NAEP) guidelines (ie, frequency of symptoms, degree of airflow obstruction, and frequency of use of oral glucocorticoids), alone and in combination, against severity as assessed by pulmonary specialists provided with 24-month medical chart data.

Design: Cross-sectional comparison of questionnaire and clinical-based markers of asthma severity with physician-assessed severity based on chart review. The pulmonologists did not have access to the results of the baseline evaluations when making their severity assessments.

Setting and participants: Study participants were 193 asthmatic members (age range, 6 to 55 years) of a

large health maintenance organization who underwent a baseline evaluation as part of a separate longitudinal study. This evaluation consisted of spirometry, skin prick testing, and a survey that included questions on symptoms and medication use. The participants in the ancillary study were selected, based on their baseline evaluation, to reflect a broad range of asthma severity.

Results: Based on the chart review, 86 of the study subjects (45%) had mild disease, 90 (45%) had moderate disease, and 17 (9%) had severe disease. This physician-assessed severity correlated highly ($p \leq 0.013$) with NAEP-based indices of severity based on oral glucocorticoid use (never, infrequently for attacks, frequently for attacks, and daily use) and on spirometry (FEV1 > 80% predicted, 60 to 80% predicted, and <60% predicted). It did not, however, correlate with current asthma symptoms (≤ once/week, 2 to 6 times/week, daily) ($p = 0.87$). A composite severity score based on spirometry and the glucocorticoid use data still provided an overall agreement of 63%, with a weighted kappa of 0.40.

Conclusions: While current symptoms are the most important concern of patients with asthma, they reflect the current level of asthma control more than underlying disease severity. Investigators must therefore use caution when comparing groups of patients for whom severity categorization is based largely on symptomatology. This observation, that symptoms alone do not reflect disease severity, becomes even more important as health-care delivery moves closer to protocols/practice guidelines and "best treatment" programs that rely heavily on symptoms to guide subsequent treatment decisions.

Effect of a Pediatric Self-Care Book on Utilization of Services in a Group Model HMO

France EK, Selna MJ, Lyons EE, Beck AL, Calonge BN, Clin Pediatr (Phila) 1999 Dec;38(12):709-15.

The purpose of this study was to determine the effect of a pediatric self-care book (SCB) with nurse telephone support on use of health services. The study was performed in a pediatric department of Kaiser Permanente in a suburb of Denver, Colorado. Well patients seen at age 2 weeks to 2.5 months (infant group) or 14 to 19 months (toddler group) were enrolled. Intervention families received a copy of the book, *Your Child's Health*, and were oriented on its use. Rates of sick visits, advice nurse calls, pharmacy prescriptions, emergency department visits, and hospital admissions were assessed. Visit and call rates were calculated, and mean rates of the SCB group and the control group were then compared. Of 1104 enrol[lee]s, 527 received the SCB; the other 577 served as controls. The SCB group had 14.0% fewer total visits (excluding well-baby visits) than controls did ($p = 0.018$). For infants and toddlers who were not first-borns, the intervention was associated with a statistically significant decrease in sick visits (23%), advice nurse phone calls (24%), and pharmacy prescriptions (26%); no statistically significant differences in study outcomes were seen among first-born study subjects. Promotion of self-care in a group model health maintenance organization can decrease use of services by families of young children.

Exploring Indicators of Telephone Nursing Quality

Hoare K, Lacoste J, Haro K, Conyers C, J Nurs Care Qual 1999 Oct;14(1):38-46.

To explore whether documentation, use of clinical guidelines, and nurse competency are the best indicators of quality telephone nursing, this study examined the relationship between these commonly cited indicators and the characteristics of a telephone nursing call. This study, done at a large health maintenance organization (HMO), found: accompanying symptoms played a major role in telephone nursing assessment; call length was related to documentation process and to number of visits to a health care facility after a call; nurses' interpersonal skills and ability to determine urgency of a call are related to the documentation process but not to outcomes of the call; time of a call is related to disposition; and disposition is related to number of visits after a call.

HMO Physicians' Use of Referrals

Bachman KH, Freeborn DK, Soc Sci Med 1999 Feb;48(4):547-57.

Clinical uncertainty is a source of variation in medical decision-making as well as a source of work-related stress. Increasing enrollment in organized health care systems has intensified interest in understanding referral utilization as well as issues such as physician dissatisfaction and burnout. We examined whether primary care physicians' affective

reactions to uncertainty and their job characteristics were associated with use of referrals and burnout. Data came from mail surveys of primary care physicians practicing in two large group model health maintenance organizations (HMOs) in the USA. Consistent with past research, we found that younger physicians had higher referral rates than older physicians, and that general internists had higher rates than either family practitioners or pediatricians. Greater stress from uncertainty increased referrals and referrals were negatively correlated with heavier work demands (patient visits per hour). Greater stress from uncertainty, perceived workload (too high) and a sense of loss of control over the practice environment were associated with higher levels of burnout.

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Cost of Care for Patients in Cancer Clinical Trials

Fireman BH, Febrenbacher L, Gruskin EP, Ray GT, J Natl Cancer Inst 2000;92(2):136-42.

Background: Information on the costs of medical care for patients enrolled in clinical trials is needed by policymakers evaluating ways to facilitate clinical research in a managed care environment. We examined the direct costs of medical care for patients enrolled in cancer clinical trials at a large health maintenance organization (HMO).

Methods: Costs for 135 patients who entered 22 cancer clinical trials (including 12 breast cancer trials) at Kaiser Permanente in Northern California, from 1994 through 1996, were compared with costs for 135 matched control subjects who were not enrolled in such trials. Cancer registry data and medical charts were used in matching the control subjects to the trial enrollees with respect to cancer site, stage, date of diagnosis, age, sex, and trial eligibility. The direct costs of medical care were compared between trial enrollees and the control subjects for a one-year period, with data on costs and utilization of services obtained from Kaiser Permanente databases and medical charts.

Results: Mean one-year costs for the enrollees in trials were 10% higher than those for the control subjects ($17,003 per enrollee compared with $15,516 per control subject; two-sided p = .011). The primary component of this difference was a $1376 difference in chemotherapy costs ($4815 per trial enrollee versus $3439 per control subject; two-sided p < .001). Costs for the 11 enrollees in trials that had a bone marrow transplant (BMT) arm were approximately double the costs for their matched control subjects (borderline significance: two-sided p = .054). The $15,041 mean cost for the enrollees in trials without BMT was similar to the $15,186 mean cost for their matched control subjects.

Conclusions: Participation in cancer clinical trials at a large HMO did not result in substantial increases in the direct costs of medical care.

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Spousal Concordance for Cancer Incidence: a Cohort Study

Friedman GD, Quesenberry CP Jr, Cancer 1999 Dec 1;86(11):2413-9.

Background: Because married couples share at least their home environment, spousal aggregation of cancer might provide clues to unsuspected etiologic factors. The authors sought to measure the concordance of cancer occurrence in married couples and explore factors that might explain greater-than-expected concordance.

Methods: The authors identified 25,670 cancer-free married couples in Northern California who were followed for up to 31 years for the development of cancer. In Cox proportional hazards analysis, the development of cancer in a spouse was treated as a time-dependent, independent variable, and spouse-with/spouse-without risk ratios were determined, controlling for age and gender. For selected concordant espoused pairs, additional explanatory information was sought in their medical records.

Results: There was no excess concordance for all cancers combined; the spouse-with/spouse-without risk ratio was 0.97 (95% confidence interval, 0.90-1.05). Statistically significant husband-wife associations were found only for cancer of the tongue and stomach and for non-Hodgkin lymphoma. Except for cancer of the penis/endometrium and testis/vulva, based on one couple with each combination, gender specific cancers did not aggregate within married couples. Established and suspected risk factors, not necessarily related to the marriage, were found for some individuals who had concordance with their spouses.

Conclusions: Little spousal concordance for cancer occurrence was found. The study of spousal aggregation does not appear useful in identifying unsuspected

environmental causes of cancer in heterogeneous populations in urban areas of affluent Western countries. A cohort study would have to be much larger than this one to detect weak spousal concordance reliably.

Changing Paternity and the Risk of Preeclampsia/Eclampsia in the Subsequent Pregnancy

Li DK, Wi S, Am J Epidemiol 2000 Jan 1;151(1):57-62.

To determine whether changing paternity affects the risk of preeclampsia or eclampsia in the subsequent pregnancy and whether the effect depends on a woman's history of preeclampsia/eclampsia with her previous partner, a cohort study was conducted based on 140,147 women with two consecutive births during 1989-1991, identified through linking of annual California birth certificate data. Among women without preeclampsia/eclampsia in the first birth, changing partners resulted in a 30% increase in the risk of preeclampsia/eclampsia in the subsequent pregnancy compared with those who did not change partners (95% confidence interval: 1.1, 1.6). On the other hand, among women with preeclampsia/eclampsia in the first birth, changing partners resulted in a 30% reduction in the risk of preeclampsia/eclampsia in the subsequent pregnancy (95% confidence interval: 0.4, 1.2). The difference of the effect of changing paternity on the risk of preeclampsia/eclampsia between women with and those without a history of this condition was significant ($p < 0.05$ for the interaction term). The above estimates were adjusted for potential confounders. These findings suggest that the effect of changing paternity depends on the history of preeclampsia/eclampsia with the previous partner and support the hypothesis that parental human leukocyte antigen sharing may play a role in the etiology of preeclampsia/eclampsia.

Second-Trimester Serum Chorionic Gonadotropin Concentrations and Complications and Outcome of Pregnancy

Walton DL, Norem CT, Schoen EJ, Ray GT, Colby CJ, N Engl J Med 1999 Dec 30;341(27):2033-8.

Background: Maternal serum chorionic gonadotropin is measured to screen for fetal chromosomal abnormalities. Whether the results can also be used to predict the risk of complications or an adverse outcome of pregnancy is not known.

Methods: We reviewed the medical records of 28,743 girls and women in whom chorionic gonadotropin was measured during the second trimester of pregnancy (between July 1, 1995, and January 31, 1997), seeking information about the complications and outcome of their pregnancies. We excluded girls and women who had preexisting risk factors for complications or an adverse outcome of pregnancy.

Results: Higher serum chorionic gonadotropin concentrations were associated with higher rates of stillbirth (odds ratio for every increase in chorionic gonadotropin of one multiple of the median, 1.4; 95 percent confidence interval, 1.1 to 1.9). There was no relation between higher serum chorionic gonadotropin concentrations and the risk of gestational diabetes, premature rupture of membranes or intrauterine growth retardation or small size for gestational age (odds ratio, 1.1; 95 percent confidence interval, 0.9 to 1.2). Higher serum chorionic gonadotropin concentrations were associated with a risk of placental abnormalities (odds ratio, 1.5; 95 percent confidence interval, 1.3 to 1.7), pregnancy-induced hypertension (odds ratio, 1.4; 95 percent confidence interval, 1.3 to 1.5), and preterm delivery without pregnancy-induced hypertension (odds ratio, 1.1; 95 percent confidence interval, 1.0 to 1.2). Inclusion in certain racial or ethnic categories (black, Filipino or Pacific Islander, unknown race or ethnic group, and "other," which included those of Middle Eastern descent and Native Americans) was a better predictor of the risk of an adverse outcome than serum chorionic gonadotropin values.

Conclusions: Measurements of serum chorionic gonadotropin are of little clinical value for predicting the risk of complications and the outcome of pregnancy.

Effect of Age on Reasons for Initiation and Discontinuation of Hormone Replacement Therapy

Ettinger B, Pressman A, Silver P, Menopause 1999 Winter;6(4):282-9.

Objective: The purpose of this study was to examine age-related differences in reasons that postmenopausal women began and stopped hormone replacement therapy (HRT).

Design: Two identical telephone surveys were conducted of women members of Kaiser Foundation Health Plan who had begun HRT within the previous three years. The first, in 1997, was of 604 older women aged 65 years or older; the second, in 1998,

was of 866 younger women aged 50-55 years. Prescription records for both groups provided the means for determining continuation of therapy.

Results: Among older women, 35% reported prevention or treatment of osteoporosis as the primary reason for starting HRT. Younger women were less likely (14%) to report this ($p < 0.001$). Relief of vasomotor menopausal symptoms was the most frequently reported reason that younger women gave for starting HRT; it was the primary reason in 34%. In contrast, only 7% of older women reported relief of vasomotor symptoms as the primary reason for starting HRT ($p < 0.001$). Older women were more likely than younger women to discontinue HRT; after 12 months, the probabilities of discontinuation were 62% and 48% (relative risk = 1.4; 95% confidence interval = 1.2-1.6). Treatment-related side effects were most often the reason given for stopping HRT; 87% of older women and 64% of younger women who stopped reported that a treatment side effect was their primary reason ($p < 0.001$). Among treatment side effects, vaginal bleeding was the most frequently reported reason for stopping HRT; it was the primary reason for stopping in 52% of older women and 29% of younger women ($p < 0.001$).

Conclusions: Older women differ from younger women in their reasons for starting and stopping HRT. Whereas osteoporosis is the predominant reason that older women begin HRT, relief of vasomotor symptoms is the major reason that younger women begin. Early discontinuation of HRT is common and is greater among older women. Intolerance of treatment, particularly vaginal bleeding, is the predominant reason for stopping HRT.

Psychosocial Treatments for Adolescent Depression

Lewinsohn PM, Clarke GN, Clin Psychol Rev 1999 Apr;19(3):329-42.

Major Depressive Disorders affect between 2% and 5% of adolescents at any one point in time. Depression in adolescence is associated with serious psychosocial deficits and has negative effects on functioning during young adulthood. Starting with the pioneering work of Lenore Butler and her colleagues, many psychosocial interventions have been developed and studied, with generally positive results. On the basis of a meta-analysis of the existing cognitive-behavioral therapy (CBT) studies, we estimate an overall effect size of 1.27 and that 63% of patients show clinically significant improvement at the end of treatment. It seems reasonable to conclude that CBT has been demonstrated to be an effective treatment for depressed adolescents. In this article we describe these interventions, most of which are meant to address the problems shown by depressed adolescents. The purpose of our article is to bring this literature to the attention of clinicians in a manner which quickly and clearly summarizes the key features of the interventions to make it easy for clinicians to take advantage of this wealth of information and to avail themselves of the existing resources. We conclude by suggesting future directions and several additional areas of application for adolescent depression treatments.

Cigarette Smoking, Alcohol Consumption, and Risk of ARDS: a 15-Year Cohort Study in a Managed Care Setting

Iribarren C, Jacobs DR Jr, Sidney S, Gross MD, Eisner MD, Chest 2000 Jan;117(1):163-8.

Study objective: To examine the association of cigarette smoking and alcohol consumption with hospital presentation of ARDS in a well-defined, multiethnic population.

Design: Retrospective cohort study.

Setting: Health maintenance organization in Northern California.

Participants: A total of 121,012 health plan subscribers (54.2% women), aged 25 to 89 years.

Outcome measure: Hospital presentation of ARDS (validated by medical chart review) from baseline in 1979 to 1985 through the end of 1993 (median, 9.9 years).

Results: There were 56 cases of ARDS (33 in men, 23 in women). The case fatality rate was 39% in both genders. ARDS was independently related to increasing age (rate ratio of ten years, 1.38; 95% confidence interval [CI], 1.12 to 1.71), to current smoking of < 20 cigarettes/d (rate ratio vs never cigarette smokers, 2.85; 95% CI, 1. 23 to 6.60), and to current cigarette smoking of ≥ 20 cigarettes/d (rate ratio vs never smokers, 4.59; 95% CI, 2.13 to 9.88). No association was observed between alcohol consumption and ARDS.

Conclusions: The results of this study suggest a relationship (with evidence of dose-response effect) between cigarette smoking and ARDS. Assuming a causal relationship, approximately 50% of ARDS cases were attributable to cigarette smoking.

Warfarin Use among Ambulatory Patients with Nonvalvular Atrial Fibrillation: the Anticoagulation and Risk Factors in Atrial Fibrillation (ATRIA) Study

Go AS, Hylek EM, Borowsky LH, Phillips KA, Selby JV, Singer DE: Ann Intern Med 1999 Dec 21;131(12):927-34

Background: Warfarin dramatically reduces the risk for ischemic stroke in nonvalvular atrial fibrillation, but its use among ambulatory patients with atrial fibrillation has not been widely studied.

Objective: To assess the rates and predictors of warfarin use in ambulatory patients with nonvalvular atrial fibrillation.

Design: Cross-sectional study.

Setting: Large health maintenance organization.

Patients: 13,428 patients with a confirmed ambulatory diagnosis of nonvalvular atrial fibrillation and known warfarin status between 1 July 1996 and 31 December 1997.

Measurements: Data from automated pharmacy, laboratory, and clinical-administrative databases were used to determine the prevalence and determinants of warfarin use in the three months before or after the identified diagnosis of atrial fibrillation.

Results: Of 11,082 patients with nonvalvular atrial fibrillation and no known contraindications, 55% received warfarin. Warfarin use was substantially lower in patients who were younger than 55 years of age (44.3%) and those who were 85 years of age or older (35.4%). Only 59.3% of patients with one or more risk factors for stroke and no contraindications were receiving warfarin. Among a subset of "ideal" candidates to receive warfarin (persons 65 to 74 years of age who had no contraindications and had previous stroke, hypertension, or both), 62.1% had evidence of warfarin use. Among our entire cohort, the strongest predictors of receiving warfarin were previous stroke (adjusted odds ratio, 2.55 [95% CI, 2.23 to 2.92]), heart failure (odds ratio, 1.63 [CI, 1.51 to 1.77]), previous intracranial hemorrhage (odds ratio, 0.33 [CI, 0.21 to 0.52]), age 85 years or older (odds ratio, 0.35 [CI, 0.31 to 0.40]), and previous gastrointestinal hemorrhage (odds ratio, 0.47 [CI, 0.40 to 0.57]).

Conclusions: In a large, contemporary cohort of ambulatory patients with atrial fibrillation who received care within a health maintenance organization, warfarin use was considerably higher than in other reported studies. Although the reasons why physicians did not prescribe warfarin could not be elucidated, many apparently eligible patients with atrial fibrillation and at least one additional risk factor for stroke, especially hypertension, did not receive anticoagulation. Interventions are needed to increase the use of warfarin for stroke prevention among appropriate candidates. ❖