

Abstracts of Articles Authored or Coauthored by Permanente Physicians

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From Southern California:

Effectiveness of a home-based palliative care program for end-of-life

Brumley RD, Enguidanos S, Cherin DA. J Palliat Med. 2003 Oct;6(5):715-24.

CONTEXT: Despite the widespread recognition of the need for new models of care to better serve patients at the end-of-life, little evidence exists documenting the effectiveness of these models.

OBJECTIVE: To evaluate the effectiveness of a palliative program for end-of-life care.

DESIGN: A comparison group study was conducted between March 1999 and August 2000 comparing subjects enrolled in a palliative care intervention to those receiving usual care.

SETTING: Home Health Department at Kaiser Permanente, TriCentral Service Area.

SUBJECTS: During the course of the two-year study, 558 subjects were enrolled. A subgroup of 300 patients who had died during the course of the study was selected for analysis; 161 were enrolled in the Palliative Care Program and 139 in the comparison group.

INTERVENTION: The Kaiser Permanente Palliative Care Project is a multidisciplinary care management approach for home-based end-of-life care and treatment. The program is designed to facilitate the transition from acute to palliative care during the last 12 months of life with the goal of improving quality of life through the provision of symptom control and pain relief, emotional and spiritual support, and patient education.

MAIN OUTCOME MEASURES: Medical service use and satisfaction with services.

RESULTS: Palliative care patients had increased satisfaction with services at 60 days after enrollment and significantly fewer emergency department visits, hospital days, skilled nursing facility days, and physician visits than those in the comparison group. Those en-

rolled in palliative care averaged a 45% decrease in costs as compared to usual care patients.

CONCLUSION: Through integrating palliative care into curative care practices earlier in the disease trajectory, chronically ill patients nearing the end of life report improved satisfaction with care and demonstrate less acute care use resulting in lower costs of care. In addition, patients enrolled in the palliative care program were more likely to die at home than comparison group patients.

From Colorado:

Implementing practical interventions to support chronic illness self-management

Glasgow RE, Davis CL, Funnell MM, Beck A. Jt Comm J Qual Saf. 2003 Nov;29(11):563-74.

BACKGROUND: Self-management support (SMS) is the area of disease management least often implemented and most challenging to integrate into usual care. This article outlines a model of SMS applicable across different chronic illnesses and health care systems, presents recommendations for assisting health care professionals and practice teams to make changes, and provides tips and lessons learned. Strategies can be applied across a wide range of conditions and settings by health educators, care managers, quality improvement specialists, researchers, program evaluators, and clinician leaders. Successful SMS programs involve changes at multiple levels: patient-clinician interactions; office environment changes; and health system, policy, and environmental supports.

PATIENT-CLINICIAN INTERACTION LEVEL: Self-management by patients is not optional but inevitable because clinicians are present for only a fraction of the patient's life, and nearly all outcomes are mediated through patient behavior. Clinicians who believe they are in

control or responsible for a patient's well-being are less able to adopt an approach that acknowledges the central role of the patient in his or her care.

SUMMARY AND CONCLUSIONS: Self-management should be an integral part of primary care, an ongoing iterative process, and patient centered; use collaborative goal setting and decision making; and include problem solving, outreach, and systematic follow-up.

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CLINICAL IMPLICATION: This article discusses how to achieve patient self-management at each of three levels: patient-clinician interactions, the office environment, and the systems/policy/environmental level. There are established evidence-based self-management principles that work for both chronic illness management and prevention. Specific applications need to be tailored to each clinical setting. The organizations that are most successful in achieving self-management use approaches that are multilevel, patient-centered, proactive, and population-based; plan patient visits and follow-up contacts; create prompts and reminders for both patients and clinicians; and distribute responsibilities for self-management support across all team members. —RG

From the Northwest:

Complications in young adults with early-onset type 2 diabetes: losing the relative protection of youth

Hillier TA, Pedula KL. Diabetes Care. 2003 Nov;26(11):2999-3005.

OBJECTIVE: To determine whether adults diagnosed with type 2 diabetes from age 18 to

44 years more aggressively develop clinical complications after diagnosis than adults diagnosed at ≥ 45 years of age.

RESEARCH DESIGN AND METHODS: We compared outcomes among 7844 adults in a health maintenance organization who were newly diagnosed with type 2 diabetes between 1996 and 1998. We abstracted clinical data from electronic medical, laboratory, and pharmacy records. To adjust for length of follow-up and sex, we used proportional hazards models to compare incident complication rates through 2001 between onset groups (mean follow-up 3.9 years). To adjust for the increasing prevalence of macrovascular disease with advancing age, onset groups were matched by age and sex to control subjects without diabetes for macrovascular outcomes.

RESULTS: Adults with early-onset type 2 diabetes were 80% more likely to begin insulin therapy than those with usual-onset type 2 diabetes (hazards ratio [HR] 1.8, 95% CI 1.5-2.0), despite a similar average time to requiring insulin (approximately 2.2 years). Although the combined risk of microvascular complications did not differ overall, microalbuminuria was more likely in early-onset type 2 diabetes than usual-onset type 2 diabetes (HR 1.2, 95% CI 1.1-1.4). The hazard of any macrovascular complication in early-onset type 2 diabetic patients compared with control subjects was twice as high in usual-onset type 2 diabetic patients compared with control subjects (HR 7.9 vs 3.8, respectively). Myocardial infarction (MI) was the most common macrovascular complication, and the hazard of developing an MI in early-onset type 2 diabetic patients was 14-fold higher than in control subjects (HR 14.0, 95% CI 6.2-31.4). In contrast, adults with usual-onset type 2 diabetes had less than four times the risk of developing an MI compared with control subjects (HR 3.7, $p < 0.001$).

CONCLUSIONS: Early-onset type 2 diabetes appears to be a more aggressive disease from a cardiovascular standpoint. Although the absolute rate of cardiovascular disease (CVD) is higher in older adults, young adults with early-onset type 2 diabetes have a

much higher risk of CVD relative to age-matched control subjects.

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From the Northwest:
Screening rarely screened women: time-to-service and 24-month outcomes of tailored interventions

Valanis B, Whitlock EE, Mullooly J, et al. *Prev Med*. 2003 Nov;37(5):442-50.

BACKGROUND: Managed care organizations and others reaching out to underscreened women seek strategies to encourage mammogram and Pap screening.

METHODS: Female HMO members aged 50-69 years and overdue for a mammogram and a Pap test ($n = 501$) were followed for 24 months after interventions began. An Outreach intervention (tailored letters and motivational telephone interviews), an Inreach intervention (motivational interview delivered in clinics), and a Combined Inreach/Outreach intervention were compared to Usual Care at 24 months. Logistic regression and Cox hazard models examined predictors of obtaining screening services and time-to-service, respectively.

RESULTS: Compared with Usual Care, the odds of Outreach women aged 50-64 obtaining a mammogram (OR = 2.06; 95% CI = 1.59-5.29), a Pap test (OR = 1.97; 95% CI = 1.12-3.53), or both (OR = 2.53; 95% CI = 1.40-4.63) remained significantly increased at 24 months. The average time-to-service for Outreach women was reduced by four months. Outreach effects persisted despite intensive, ongoing health plan efforts to improve screening of all women.

CONCLUSIONS: This brief, tailored outreach intervention was an effective strategy for encouraging cervical and breast cancer screening among women overdue for both screening services. It also shortened time-to-service, an important benefit for early detection and treatment. Alternative strategies are needed for women who remain unscreened.

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From Northern California:
Reproductive health counseling at pregnancy testing: a pilot study

Boise R, Petersen R, Curtis KM, et al. *Contraception*. 2003 Nov;68(5):377-83.

OBJECTIVES: To pilot brief reproductive health counseling for women obtaining pregnancy testing in a managed-care setting who did not desire pregnancy.

METHODS: Women received counseling, access to contraception and a booster call at two weeks. Changes in contraceptive behavior were evaluated.

RESULTS: Of 85 women who completed counseling, 58 (68%) completed follow-up. Participants reported that counseling was useful at baseline (94%) and follow-up (83%). The staff found the intervention important (100%) and implementation feasible (100%). Forty-one percent of participants improved their use of contraception (from no use or from less effective use to more effective use). Twenty-nine percent continued highly effective use and 9% recessed from highly effective use. Of 22 participants with risk of sexually transmitted disease, three (14%) began using condoms consistently, while one (5%) continued using condoms consistently.

CONCLUSIONS: Counseling at pregnancy testing was well accepted by the staff and participants. Observed behavioral changes suggest that this intervention may be effective in increasing effective use of contraception.

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From the Northwest:
Older women with fractures: patients falling through the cracks of guideline-recommended osteoporosis screening and treatment

Feldstein AC, Nichols GA, Elmer PJ, Smith DH, Aickin M, Herson M. *J Bone Joint Surg Am*. 2003 Dec;85-A(12):2294-302.

BACKGROUND: Many older patients with fractures are not managed in accordance with evidence-based clinical guidelines for osteoporosis. Guidelines recommend that these patients receive treatment for clinically ap-

parent osteoporosis or have bone mineral density measurements followed by treatment when appropriate. This cohort study was conducted to further characterize the gap between guidelines and actual practice with regard to bone mineral density measurement and treatment of older women after a fracture. Our purpose was to aid in the design of more effective future interventions.

METHODS: We identified female members of a not-for-profit group-model health maintenance organization who were 50 years of age or older and who had a diagnosis of a new fracture as defined in the study. We used administrative databases and the clinical electronic medical records to obtain data on demographics, diagnoses, drugs dispensed by the pharmacy, and the measurement of bone mineral density.

RESULTS: The study population included 3812 women with an average age of 71.3 years. Fewer than 12% of the women had a diagnosis of osteoporosis prior to the index fracture; 10.7% had an increased risk for secondary osteoporosis and 38.8%, for falls because of a diagnosis or medication. It was found that 46.4% of the study population had been managed as specified by clinical guidelines. The patients who had been managed as specified by the guidelines were younger and less likely to have the risk factor of a weight of <127 lb (58 kg), a hip fracture, or a wrist fracture. They were also more likely to be taking steroids on a chronic basis and to have had a vertebral fracture. The percentage of women who had measurement of bone mineral density increased during the study period, from 1.3% in 1998 to 10.2% in 2001. Of the patients receiving treatment for osteoporosis, 73.6% adhered to the treatment regimen.

CONCLUSIONS: Adherence to guidelines for evaluation and treatment for osteoporosis after a patient sustained a fracture did not improve between 1998 and 2001 despite the promulgation of evidence-based guidelines. Methods to enhance education and facilitate processes of care will be necessary to reduce this gap. It may be fruitful to target high-risk subgroups for tailored interventions for prevention of refracture.

From Northern California:

Hot tub use during pregnancy and the risk of miscarriage

Li DK, Janevic T, Odouli R, Liu L. Am J Epidemiol. 2003 Nov 15;158(10):931-7.

To examine whether hot tub or whirlpool bath use during pregnancy increases the risk of miscarriage, the authors conducted a 1996-1998 population-based prospective cohort study at the Kaiser Permanente Medical Care Program in Oakland, California. Of 2729 eligible women, 1063 completed the interview. Miscarriage before 20 weeks of gestation was ascertained for all participants. Information on hot tub or whirlpool bath use was obtained during an in-person interview conducted early in the pregnancy. A Cox proportional hazards model was used to estimate the hazard ratio after adjustment for potential confounders. Compared with nonuse, use of a hot tub or whirlpool bath after conception was associated with a twofold increased risk of miscarriage (adjusted hazard ratio (aHR) = 2.0, 95% confidence interval: 1.3, 3.1). The risk seemed to increase with increasing frequency of use (aHR = 1.7 for less than once a week, aHR = 2.0 for once a week, and aHR = 2.7 for more than once a week) and with use during early gestation (aHR = 2.3 for initial use within the first four weeks of the last menstrual period and aHR = 1.5 for initial use after four weeks of the last menstrual period). Findings suggest an association between use of a hot tub or whirlpool bath during early pregnancy and the risk of miscarriage.

Li DK, Janevic T, Odouli R, Liu L. Hot tub use during pregnancy and the risk of miscarriage, American Journal of Epidemiology 2003, 158(10), p 931-7, by permission of Oxford University Press.

CLINICAL IMPLICATION: For women (1) who are pregnant, (2) who are planning on being pregnant, and (3) who are sexually active, though not "planning" a pregnancy, they should stop using hot tub or Whirlpool bath during first trimester to reduce their risk of miscarriage. However, they may want to consider to stop using hot tub or Whirlpool bath throughout the pregnancy because there have been reports that hyperthermia in pregnancy increases the risk of certain birth defects. Use of regular bath tub did not increase the risk of miscarriage in our study. —DL

From Northern California:

Nonvitamin, nonmineral supplement use over a 12-month period by adult members of a large health maintenance organization

Schaffer DM, Gordon NP, Jensen CD, Avins AL. J Am Diet Assoc. 2003 Nov;103(11):1500-5.

OBJECTIVE: National survey data show an increase in the prevalence of nonvitamin, nonmineral (NVNM) supplement use among adults over the past ten years. Concern over this trend is based in part on reports of potential drug-supplement interactions. The type and prevalence of supplement use by demographic and behavior characteristics were examined among members of a large group model health plan, including those with selected health conditions.

DESIGN: Data on the use of herbal medicines and dietary supplements among survey respondents were analyzed. Questions employed a checklist for six specific NVNM supplements with optional write-ins.

SUBJECTS/SETTING: A stratified random sample of 15,985 adult members of a large group model health maintenance organization in northern California, who were respondents to a 1999 general health survey.

STATISTICAL ANALYSES PERFORMED: Analyses were conducted with poststratification weighted data to reflect the actual age, gender, and geographic distribution of the adult membership from which the sample was drawn.

RESULTS: An estimated 32.7% of adult health plan members used at least one NVNM supplement. The most frequently used herbs were Echinacea (14.7%) and Gingko biloba (10.9%). Use of all NVNM supplements was highest among females, 45 to 64 years of age, whites, college graduates, and among those with selected health conditions.

APPLICATIONS: Dietetics professionals need to uniformly screen clients for dietary supplement use and provide accurate information and appropriate referrals to users.

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From Southern California:

Restenosis in intervened coronaries with hyperhomocysteinemia (RICH)

Kojoglanian SA, Jorgensen MB, Wolde-Tsadik G, Burchette RJ, Aharonian VJ. Am Heart J. 2003 Dec;146(6):1077-81.

BACKGROUND: Controversy exists regarding the contribution made by elevated serum homocysteine levels in raising the risk of restenosis after percutaneous coronary interventions. The objective of this study was to determine whether elevated homocysteine levels increase the risk of restenosis.

METHODS: Two hundred and two consecutive patients undergoing percutaneous coronary intervention with stents on previously nonintervened native coronary arteries were eligible for enrollment in the study. Before the percutaneous coronary intervention, a fasting serum homocysteine level was drawn. Patients were followed-up by their primary cardiologists for recurrence of symptoms. Those patients who had a recurrence of anginal symptoms consistent with clinical restenosis were referred for a repeat angiogram. All other patients were followed-up medically. The homocysteine levels of the patients who had repeat angiography for recurrent symptoms were compared to those who were followed-up medically.

RESULTS: Age, stent length, stent diameter, and homocysteine levels were all associated with an increased risk of restenosis in the

univariate analysis. In the multiple logistic regression model, the only variable that remained significant in relation to an increased risk of restenosis was homocysteine. There was a significant difference in the mean homocysteine levels between the restenosis group (13.7 micromol/L) and those without restenosis (9.6 micromol/L; $p < .0001$). A homocysteine level ≥ 11.1 micromol/L was identified as the best threshold for an increased risk of restenosis with a sensitivity of 75.0% and specificity of 76.9% (OR 6.5, CI 2.3-18.6; $p = .0004$).

CONCLUSION: This study demonstrates that elevated homocysteine levels strongly correlate with an increased risk of restenosis.

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From Northern California:

Dietary intake of n-3, n-6 fatty acids and fish: relationship with hostility in young adults—the CARDIA study

Iribarren C, Markovitz JH, Jacobs DR Jr, Schreiner PJ, Davi GL, Hibbeln JR. Eur J Clin Nutr. 2004 Jan;58(1):24-31.

BACKGROUND: Hostility has been shown to predict both the development and manifestation of coronary disease. Examining the inter-relation of dietary intake of fish and of polyunsaturated (n-3 and n-6) essential fatty

acids with hostility may provide additional insights into the cardioprotective effect of dietary fish and polyunsaturated fatty acids.

OBJECTIVE: To examine the association of dietary n-3, n-6 fatty acids and fish with level of hostility in a sample of 3581 urban white and black young adults.

DESIGN: Cross-sectional observational study as part of an ongoing cohort study. A dietary assessment in 1992-1993 and measurement of hostility and other covariates in 1990-1991 were used in the analysis.

RESULTS: The multivariate odds ratios of scoring in the upper quartile of hostility (adjusting for age, sex, race, field center, educational attainment, marital status, body mass index, smoking, alcohol consumption and physical activity) associated with one standard deviation increase in docosahexaenoic acid (DHA, 22:6) intake was 0.90 (95% CI = 0.82-0.98; $p = 0.02$). Consumption of any fish rich in n-3 fatty acids, compared to no consumption, was also independently associated with lower odds of high hostility (OR = 0.82; 95% CI = 0.69-0.97; $p = 0.02$).

CONCLUSIONS: These results suggest that high dietary intake of DHA and consumption of fish rich in n-3 fatty acids may be related to lower likelihood of high hostility in young adulthood. The association between dietary n-3 fatty acids and hostile personality merits further research. ♦

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The circumstances of your life have uniquely qualified you to make a contribution. And if you don't make that contribution, nobody else can make it.

—Rabbi Harold S Kushner, b 1935, Rabbi Laureate of Temple Israel in Natick, MA, author of *When Bad Things Happen to Good People*