



Permanente Abstracts

The Impact of Increasing Patient Prescription Drug Cost Sharing on Therapeutic Classes of Drugs Received and on the Health Status of Elderly HMO Members

Johnson R, Goodman M, Hornbrook M, Eldredge M. Health Services Research 1997 Apr;32:1

Objective: To assess the impact of increased prescription drug copayments on the therapeutic classes of drugs received and health status of the elderly.

Hypotheses Tested: Increased prescription drug copayments will reduce the relative exposure to, annual days use of, and prescription drug costs for drugs used in self-limiting conditions but will not affect drugs used in progressive chronic conditions and will not reduce health status.

Study Design: Each year over a three-year period, one or the other of two well-insured Medicare risk groups in an HMO setting had their copayments per dispensing increased. Sample sizes ranged from 6,704 to 7,962.

Data Sources/Data Collection: Automated administrative data systems of the HMO were used to determine HMO eligibility, prescription drug utilization, and health status.

Analysis Design: Analysis of variance or covariance was employed to measure change in dependent variables.

Findings: Relative exposure, annual days of use, and prescription drug costs for drugs used in self-limiting conditions and in progressive chronic conditions were not affected in a consistent manner across years by increases in prescription drug copayment. Health status may have been adversely affected. Larger increases in copayments appeared to generate more changes.

Conclusions: Small changes in copayments did not appear to substantially affect outcomes. Large changes in copayments need further examination.

Key Words: drug copayment, drug costs, drug utilization, health status

One Health Maintenance Organization's Experience: Obstetric Costs Depend More on Staffing Patterns Than on Mode of Delivery

Finkler MD, Wirtschaftler DD. J Perinatol 1997 Mar-Apr;17(2):148-55

Objective: To examine whether the mode of obstetric delivery is related to resource costs, case mix, maternal length of stay, or neonatal morbidity.

Data Sources/Data Collection: Patients (27,289) who delivered babies at nine hospitals within one health maintenance organization in 1989 were the source of data. Case-mix adjustment and outcome measures (maternal length of stay and neonatal morbidity) were computed from discharge abstract indi-

cators, whereas cost data (direct professional hours) came from departmental financial reports. Costs and outcomes were adjusted by regression analysis for differences in case mix and then compared by correlation analysis.

Results: Neither adjusted nor unadjusted cesarean-section rates and obstetric cost per case were significantly correlated over the range of observed cesarean-section rates. Aggregate cesarean-section rates and outcome indicators were also statistically unrelated.

Conclusions: Cesarean-section rate variation across hospitals was unrelated to the observed variation in obstetric costs, which were closely related to variations in staffing and less closely to differences in patient case mix and scale.

Analysis of the Costs of NSAID-Associated Gastropathy: Experience in a US Health Maintenance Organization

Johnson RE, Hornbrook MC, Hooker RS, Woodson GT, Shneidman R. Pharmacoeconomics 1997 Jul;12(1):76-88

Background: Clinicians recognize nonsteroidal anti-inflammatory drugs (NSAIDs) as valuable first-line agents in the treatment of rheumatic disorders and as dangerous irritants to the gastrointestinal tract. This has led to questions about the economic impact of NSAID-induced gastropathy in populations.

Objective: To estimate the 1992 costs of NSAID-associated gastropathy episodes, and calculate an iatrogenic cost factor for NSAID-associated gastropathy among elderly members of a health maintenance organization (HMO), the Northwest Region of Kaiser Permanente.

Study Design: Using data retrieved from automated databases and from medical records, NSAID and antiulcer drug costs were calculated, and estimates were made of the incidence rates of inpatient and outpatient NSAID-associated gastropathies, the services provided to treat them, and the cost of those services.

Results: Kaiser Permanente Northwest spent \$US0.35 for each \$US1.00 spent on NSAID therapy for the elderly, an iatrogenic cost factor of 1.35. The estimated average treatment per NSAID-associated gastropathy episode was \$US2171. The average outpatient pharmacy cost per elderly NSAID user was \$US80, and estimated average NSAID-associated treatment cost per elderly user was \$US43.

Conclusions: Although the findings were specific to the HMO because of the databases used, the methodology employed, and the drug formulary influence on NSAID selection, they show that a substantial amount of resources were used to treat NSAID-induced gastropathies in the elderly, underscoring the risk of prescribing NSAIDs and reinforcing the need for their prudent use in elderly patients.

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The Importance of Sputum Cytology in the Diagnosis of Lung Cancer: A Cost-Effectiveness Analysis

Raab SS, Hornberger J, Raffin T. Chest 1997 Oct;112(4):937-45.

Objective: To assess the potential health and cost effects of initial testing with sputum cytology to diagnose lung cancer.

Design: Cost-effectiveness analysis.

Data Sources: Surveillance Epidemiology and End Results (SEER) program; cost data from Northern California Kaiser Permanente Hospitals, Stanford University, and University of Iowa; National Center for Health Statistics; and a MEDLINE search.

Interventions: The use of sputum cytologies preceding other tests (ie, fine-needle aspiration, bronchoscopy, thoracoscopy) in patients with suspected lung cancer.

Main Outcome Measures: Mortality associated with testing and initial surgical treatment (eg, thoracoscopy to remove a local-stage, centrally located cancer), cost of testing and initial treatment, life expectancy, lifetime cost of medical care, and cost-effectiveness.

Results: In central lesions, sputum cytology as the first test was the dominant strategy because it both lowers medical-care costs (\$2,516 per patient) and lowers the mortality risk (19 deaths in 100,000 patients) of the evaluation without adversely affecting long-term survival. In peripheral lesions, sputum cytology costs less than \$25,000 per year of life saved if the pretest probability of cancer exceeds 50%. The estimated annual savings of adopting sputum cytology as the first test for diagnosing lung cancer in the United States is at least \$30 million.

Conclusions: Experience in regional centers indicates that sputum cytologic testing is infrequently ordered before implementing invasive diagnostic techniques, even in patients with central lung masses. The study findings suggest that sputum cytology as the first test in suspected lung cancer is likely to be cost-saving without adversely affecting patient outcomes.

MMR2 Immunization at 4 to 5 Years and 10 to 12 Years of Age: A Comparison of Adverse Clinical Events after Immunization in the Vaccine Safety Datalink Project

Davis RL, Marcuse E, Black S, Shinefield H, Givens B, Schwalbe J, Ray P, Thompson RS, Chen R. Pediatrics 1997 Nov;100(5):767-71.

Background: The Advisory Committee on Immunization Practices recommends a second dose of measles,

mumps, and rubella vaccine (MMR2) at 4 to 5 years of age, whereas the American Academy of Pediatrics suggests MMR2 immunization at age 11 to 12 years of age. Because there is little information on whether the rate of adverse reactions to MMR2 immunization varies among these two age groups, we took advantage of differing immunization policies at two large HMOs to compare the frequency of clinical events after, and possibly related to, MMR2 immunization.

Methods: Information was collected on clinical events plausibly associated to MMR immunization (seizures, pyrexia, malaise/fatigue, nervous/musculoskeletal symptoms, rash, edema, induration/ecchymoses, lymphadenopathy, thrombocytopenia, aseptic meningitis, and joint pain) in two cohorts. At three facilities at Northern California Kaiser (Oakland, CA), 8514 children received MMR2 immunization at 4 to 6 years of age; at Group Health Cooperative (Seattle, WA) 18,036 children received MMR2 immunization at 10 to 12 years of age. To account for age-related differences in health care use within each HMO, clinical events in a 3-day period after immunization were compared with events in a 30-day period before vaccination.

Results: Children 10 to 12 years of age were 50% more likely to have a clinical event after MMR2 immunization than in the period before immunization (odds ratio, 1.45; 95% confidence interval: 1.00,2.10). Children 4 to 6 years of age were less likely to have a visit for an event after immunization compared with the period before immunization (odds ratio, 0.64; 95% confidence interval: 0.40,1.01).

Conclusions: These results suggest that the risk for clinical events after MMR2 immunization is greater in the 10- to 12-year-old age group than in the 4- to 5-year-old age group.

Breast Cancer Survival and Treatment in Health Maintenance Organization and Fee-for-Service Settings

Potosky AL, Merrill RM, Riley GF, Taplin SH, Barlow W, Fireman BH, Ballard-Barbach R. J Natl Cancer Inst 1997;89(22):1683-91

Background: Enrollment in health maintenance organizations (HMOs) has increased rapidly during the past 10 years, reflecting a growing emphasis on health care cost containment. To determine whether there is a difference in the treatment and outcome for female patients with breast cancer enrolled in HMOs versus a fee-for-service setting, we compared the 10-year survival and initial treatment of patients with breast cancer enrolled in both types of plans.

Methods: With the use of tumor registries covering the greater San Francisco-Oakland and Seattle-Puget Sound areas, respectively, we obtained

information on treatment and outcome for 13,358 female patients with breast cancer, aged 65 years and older, diagnosed between 1985 and 1992. We linked registry information with Medicare data and with data from the two large HMOs included in the study. We compared the survival and treatment differences between HMO and fee-for-service care after adjusting for tumor stage, comorbidity, and sociodemographic characteristics.

Results: In San Francisco-Oakland, the 10-year adjusted risk ratio for breast cancer deaths among HMO patients compared with fee-for-service patients was 0.71 (95% confidence interval, 0.59, 0.87) and was comparable for all deaths. In Seattle-Puget Sound, the risk ratio for breast cancer deaths was

1.01 (95% confidence interval: 0.77, 1.33) but somewhat lower for all deaths. Women enrolled in HMOs were more likely to receive breast conserving surgery than women in fee-for-service settings (odds ratio, 1.55 in San Francisco-Oakland; 3.39 in Seattle). HMO enrollees undergoing breast-conserving surgery were also more likely to receive adjuvant radiotherapy (San Francisco-Oakland odds ratio, 2.49; Seattle odds ratio, 4.62).

Conclusions: Long-term survival outcomes in the two prepaid group practice HMOs in this study were at least equal to, and possibly better than, outcomes in the fee-for-service system. In addition, the use of recommended therapy for early-stage breast cancer was more frequent in the two HMOs.



"Vase of Flowers" by Stephen Bachhuber, MD