

differences in age (GH older), household income (KPCO higher) distributions, and education (54% KPCO vs. 44% 4 year college graduate). Six percent of both groups self-rated health as fair or poor. Additional results will be provided. **Conclusions:** This evaluation will provide novel health and productivity data associated with value-based designs.

**Keywords:** Health insurance, Health economics, Worksite health promotion  
doi:10.3121/cmr.2011.1020.c-a5-04

C-A5-02:

### Is Tailored Screening for Colorectal Cancer based on Gender and Race Cost-Effective?

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**Background/Aims:** There is increasing discussion regarding screening strategies for colorectal cancer (CRC). Recent evidence suggests guidelines should be individualized by age and race to minimize disease burden and screening costs. The United States Preventive Services Task Force (USPSTF) strongly recommends that clinicians screen men and women 50 years of age or older for colorectal cancer (A recommendation). The USPSTF evidence review found good, direct evidence of the effectiveness of fecal occult blood testing (FOBT); fair, direct evidence for the effectiveness of flexible sigmoidoscopy; and indirect evidence for combined FOBT & flexible sigmoidoscopy, colonoscopy alone, and double contrast barium enema. **Methods:** A 9-state discrete-time Markov micro simulation of the natural progression of colorectal cancer estimated CRC incidence and treatment costs for a US birth cohort. Specific emphasis was given to known differences in incidence and progression among men, women, blacks, and whites. We compared the natural history “base case” of no screening to three alternative strategies: 1) Screening at age 50 with variable screening technologies, 2) 10-year colonoscopy starting at age 50, 3) 10-year colonoscopy with starting age individualized to gender and race. **Results:** The base case scenario had an overall burden of 5,712 cases and 2,027 deaths per 100,000 with the highest burden being among black males (6,118 cases and 2,430 deaths). The current USPSTF recommendation would save 5,082 QALYs/100,000 for a CE ratio of \$22,358 with the largest impact being among black males (7000 QALYs/100,000; CE ratio of \$20,236). Starting at age 50, 10-year colonoscopies would save 6,132 QALYs/100,000 (CE ratio of \$40,912). A tailored strategy which would begin screening black males at age 40, black females at age 45, white males at age 50 and white females at age 55 would save 7,509 QALYs/100,000 (CE ratio of \$15,567). **Conclusions:** Individualized guidelines for CRC screening could contribute to decreasing disparities in disease burden between blacks and whites in a cost effective manner. The acceptability of such guidelines should be explored.

**Keywords:** Colorectal cancer, Screening strategies, Cost-effectiveness  
doi:10.3121/cmr.2011.1020.c-a5-02

PS1-25:

### The Impact of HPV Vaccination Upon Optimal Cervical Cancer Screening Strategies

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**Background/Aims:** The availability of human papillomavirus (HPV) testing and vaccination raises questions regarding the cost-effectiveness of current cervical cancer screening recommendations. The United States Preventive Services Task Force (USPSTF) strongly recommends screening for cervical cancer in women who have been sexually active and have a cervix (A Recommendation). The USPSTF found good evidence from that screening with cervical cytology (Pap smears) reduces incidence of and mortality from cervical cancer. The USPSTF has made no recommendations regarding the use of a human papillomavirus (HPV) vaccine while the Advisory Committee on Immunization Practices (ACIP) recommends routine vaccination of all females aged 11-12. Direct evidence regarding the impact of the HPV vaccine and the optimal strategy for cervical screening is limited. **Methods:**

A 19-state Markov microsimulation was developed to model a US birth cohort from ages 13-85 through the natural progression of cervical cancer. The model analyzed several screening strategies in a vaccinated and an unvaccinated population. Results were expressed as quality-adjusted life years (QALYs), lifetime screening and treatment costs, and incremental cost-effectiveness of different screening and vaccination strategies. The specific strategies considered were: tri-annual screening (current USPSTF recommendation), HPV vaccination only, and vaccination with differing screening increments of 1, 2, 3, 4 and 5 years. The model was further extended to consider potential disparities among ethnic groups. **Results:** Without vaccination, the current USPSTF recommendation of tri-annual screening provides 1,304 more QALYs/10,000 for a cost effectiveness of \$12,375/QALY. A vaccination only strategy would yield an extra 690 QALYs/10,000 for a cost effectiveness of \$14,887/QALY. Coupled with vaccination, screening every 4 years (\$13,362/QALY) is more cost-effective than annual (\$33,616), bi-annual (\$22,062), tri-annual (\$17,994), and five-year (\$15,273) strategies. **Conclusions:** These results indicate that for those who obtain HPV vaccination, recent recommendations for less frequent cervical cancer screening could be re-enforced.

**Keywords:** Human papillomavirus (HPV) vaccine, Cervical cancer, Screening strategies  
doi:10.3121/cmr.2011.1020.ps1-25

PS1-30:

### Cost-Effectiveness Analysis of Screening for Kras and Braf Genetic Mutations in Metastatic Colorectal Cancer

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**Background/Aims:** In the case of metastatic colorectal cancer (mCRC) there is sufficient evidence to show that significantly more effective and expensive anti-Epidermal Growth Factor Receptor (anti-EGFR) monoclonal antibodies like Cetuximab and Panitumumab are effective only if the patient does not have Kras and Braf genetic mutations. Using genetic screening, it is possible to detect these mutations, and avoid unnecessary treatment costs in patients where the use of anti-EGFR antibodies would be ineffective. Current work is based on a decision analysis model which includes anti-EGFR antibodies, anti-VEGF antibodies and chemotherapies as possible lines of treatment. The objective is to complete a cost-effectiveness analysis of screening for Kras and Braf genetic mutations in order to evaluate current and future guidelines on mutation testing. **Methods:** A Monte Carlo Markov model for mCRC is built using eight basic states: surveillance, death, palliative, colon resection, anti-EGFR therapy, anti-VEGF therapy, Oxaliplatin-based therapy and Irinotecan-based therapy. We setup the model with patients having Kras and Braf genetic mutations and synchronous or asynchronous tumors, which can be resectable with variation in progression and response to lines of treatments with a probability equal to the prevalence rates. The model tracks patients on a weekly basis. **Results:** We generated a comprehensive decision analysis model that simulates disease progression, treatment and screening of patients with mCRC. We will present the cost-effectiveness analysis of screening for Kras and Braf in various real world settings based upon results that will be available in March. **Conclusions:** Our decision analysis model's structure and functionality provides an intuitive understanding of the use of screening in the context of mCRC. It provides an objective tool for assessing guidelines regarding the use of genetic screening for mutations in mCRC tumors.

**Keywords:** Colorectal cancer, Genetic screening, Cost-effectiveness analysis  
doi:10.3121/cmr.2011.1020.ps1-30

PS1-06:

### Implications of Diabetes on Dental Costs in an Insured Population

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