adequate patient preparation in terms of dietary restrictions which could impede test accuracy. There were inconsistencies among physicians regarding when in a patient’s life to initiate screening, and at what age to discontinue screening. CONCLUSIONS: This systematic review of ten included studies reflected considerable knowledge gaps among physicians, which could contribute to reasons for inadequate screening rates. Provider education about CRC screening should emphasize guidelines regarding when to start screening, frequency rates for screening with given modalities, and particular techniques and precautions that should be used to perform screening.

**PCN21**

**RETRENSFORMATION OF ESTIMATED LOG-TRANSFORMED COSTS WHEN THE ERRORS PRESENT HETEROSKEDASTICITY**

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OBJECTIVE: Log transformation reduces robustness by focusing on symmetry. It improves precision and it diminishes the outlier effect. One big disadvantage of log models is retransformation problems. Although smearing methods provides non-parametric way to transform estimated costs, it fails to adjust heteroskedasticity especially if the form of heteroskedasticity is not known. In this paper, we propose a method where we can apply transformation accounting for heteroskedasticity.

We compare our results with smearing estimators and generalized linear model (GLM) estimators. METHODS: Two form of heteroskedasticity is considered: 1) The heteroskedasticity is known up to a multiple constant. We used generalized least squares (GLS) estimator for correcting heteroskedasticity and its transformation. 2) The form of heteroskedasticity is unknown. If this is the case, feasible GLS method is used. After correcting for heteroskedasticity, we applied retransformation method for transformed equations to do the retransformation. RESULTS: Medstat Market Scan data is used to show the application. Cost level estimators are compared: OLS estimation, smearing transformation assuming no heteroskedasticity, smearing transformation with heteroskedasticity, GLM estimators where the family is gaussian with logarithmic link function. RESULTS: Estimation methods yield that log scale residuals were heavy tailed. White Test suggested the presence of heteroskedasticity. The graph of squared residuals on disease stage levels show that variance is increasing with an increased level of stage levels. Park test suggested that if GLM is chosen, gaussian family should be chosen. Comparisons of the retransformed costs yield that smearing transformation after accounting for least deviation yielded least minimum square errors. CONCLUSION: We attempted to solve the biggest disadvantage of log transformed cost estimation by proposing two stage estimation procedure where at the first stage GLS or feasible GLS is used to correct for possible heteroskedasticity (depending on the form of heteroskedasticity), at the second stage smearing method is applied to transformed equation.

**PCN22**

**ESTIMATION OF CENSORED MEDICAL COUNT DATA**

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OBJECTIVE: Censoring is common problem with medical count data. Estimation over only uncensored patients yields bias toward the patients who have shorter survival time since patients who have longer survival times are high likely to be censored. Standard survival analysis is not applicable since the number of visits during the study time and after censoring time is not independent. The objective of this paper is to propose a method, which can be applied to censored count data. METHOD: The proposed method first estimates the probability of censoring by using logit model. Then, second stage involves estimating weighted Poisson regression where weights are calculated as inverse of estimated probability of censoring. We show that the resulting estimators are consistent. Standard errors from second stage are not valid and should be adjusted for first stage estimation. We estimate the errors by using bootstrapping techniques. RESULTS: Medstat Market Scan data is used as an application of the method. Total hospitalization days after a year of initial diagnoses is estimated. Patients who are diagnosed less than a year before the end of study period are considered as censored. After using inverse probability weighted poisson regression, we also estimate the total hospitalization days by dropping the patients whose visits are censored. A test is proposed to compare the coefficients. We found that the difference in coefficients are significant (p < 0.0004). CONCLUSION: This paper presents a method for testing and correcting for possible sample selection bias for cross sectional data. In our application we assessed the influence of explanatory variables, such as patient and clinical characteristics, on inpatient visits of asthma two years following diagnosis after accounting for possible selection bias due to censoring. We applied poisson and our proposed method and to show that failing to do the adjustments yield different estimators.