than on rare, serious outcomes. As a result, the samples are too small to estimate the financial burden of less common outcomes; underestimation of the economic value of these agents may occur. To illustrate, we examined the cost of a less common, but serious outcome of chemotherapy, thrombocytopenia-related bleeding, in large and small samples of cancer patients. METHOD: The cost of 1562 chemotherapy cycles in 612, randomly-chosen cancer patients was estimated from retrospective review of medical and administrative databases. Cost was estimated using a resource-based strategy (pharmaceuticals, hospital and clinic costs, transfusions) from the provider’s perspective, in 1999 dollars. Twelve random, 10% samples of the cycles were selected, approximating the size of most growth factor trials. Mean costs were compared with two-tailed t-tests. RESULTS: Using the entire sample, cycles with thrombocytopenia were more expensive than those without ($7933 vs 4875, p < 0.0001). Cycles with bleeding were more expensive than those without ($13,728 vs $7374, p < 0.0001). They were comparable in the costs of all inpatient and outpatient services except monitoring ($538 vs $472, p = 0.01), transfusions to prevent bleeding ($1367 vs $758, p = 0.007), and bleeding treatment ($4702 vs $0, p < 0.0001). However, the cost of cycles with bleeding (range: $8289–$16,277) was significantly higher than cycles without bleeding (range: $5796–$8872) in only 5 of the 12 small samples. CONCLUSIONS: The economic impact of uncommon, but expensive outcomes should be examined in samples large enough to permit calculation of stable estimates of cost. The high cost of rare outcomes such as bleeding will be better appreciated, as will the importance of avoiding such episodes by preventing thrombocytopenia.

### PCN14

**CHOICE OF LOCALIZED BREAST CANCER TREATMENTS IN A MEDICARE POPULATION: A COMPARISON OF OUTCOMES AND COSTS**

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OBJECTIVES: In this study we compared outcomes and costs between three treatments options (mastectomy (MRM), breast conservation surgery with radiation (BCSRT), and breast conservation surgery only (BCSO)) for elderly women with localized breast cancer. METHODS: The sample was a national random sample from Medicare claims of 2,821 elderly women treated between 1992 to 1994 for localized breast cancer. Data on patient preferences were collected in patient interviews conducted in 1997. The outcomes studied were 5-year survival, Quality Adjusted Life Years (QALY), total costs and cost/QALY. For each outcome we used univariate, multivariate and instrumental variable analysis to compare the differences between treatments. The instrumental variables used were geographic region, and distance to nearest radiation facility. RESULTS: There were 1813 patients who received MRM, 704 who received BCSRT, and 304 who received BCSO. The multivariate analysis showed significantly higher survival for BCSRT relative to MRM (4.21 vs. 4.13) and significantly higher QALYs (3.50 vs. 3.45), but the IV analysis found an insignificant difference opposite in sign. Costs were significantly higher for BCSRT relative to MRM ($54,073 vs. $37,327 in multivariate analysis). The cost-effectiveness ratio of BCSRT relative to MRM is $334,920/QALY (CI:$80,000 to NW) per QALY using multivariate estimates and dominated using IV estimates. CONCLUSION: Survival and QALYs are statistically higher in traditional analyses of the BCSRT group relative to MRM, but the IV analysis suggests an upward bias due to the selection of healthier patients into BCSRT. This finding is consistent with previous studies. Costs are unequivocally higher in the BCSRT group suggesting BCSRT is not a cost-effective option relative to MRM. Supplemental analyses suggest that the presence of choice between MRM and BCSRT raises the quality of life for all elderly women independent of the choice that is made. Thus, choice is costly but valuable.

### PCN15

**DIFFERENCES BETWEEN PREFERENCES FOR HEALTH STATES: THE CHEMOTHERAPY ADVERSE EVENT SELF-ASSESSED RESPONSE (CAESAR) QUESTIONNAIRE**

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OBJECTIVE: This study assesses the health state preferences for adverse effects of chemotherapy on healthy individuals. Time trade off (TTO), Standard Gamble (SG), and Visual Analogue Scale (VAS) scores were compared between side-effects and across two time points. METHOD: A convenience sample of healthy pharmacy students self-administered a questionnaire of TTO, SG and VAS preferences for 12 different chemotherapy-related side-effects ranging from anorexia to severe nausea. Respondents completed the questionnaire on two separate occasions separated by 2 weeks. RESULTS: Ninety-three students completed at least one survey; 53 subjects completed both surveys (57%). The mean age of the sample was 25 years; 21% were male. While no missing values were seen in VAS questions, 23 missing responses were noted in the TTO and 72 in the SG. TTO had the highest test-retest correlation (ranging from 0.35 to 0.75) and VAS had the lowest correlation (ranging from 0.29 to 0.65). The order of the preference measures was consistent across nine of the twelve side-effects. The widest