expected LOS compared to baseline (OR = 0.791, p < 0.01). Among patients who did exceed the expected LOS, Eloseal patients did so at a reduced rate (IRR = 0.899, p < 0.01). Surgical use was not associated with any significant difference from baseline, while Gelfoam use showed a slightly higher associated likelihood of exceeding expected LOS (OR = 1.099, p = 0.05). CONCLUSIONS: Eloseal use was associated with lower than expected LOS in cardiac surgery. Given small profit margins achieved by hospitals today, further assessment is warranted to distinguish products with favorable outcomes.

HEALTH CARE INTERVENTIONS – Patient-Reported Outcomes Studies

PHC6

SUBJECTS SUFFERING FROM HALITOSIS: IMPACTS OF THE TREATMENT

Task C

Pierre Fabre; Boulogne, France

OBJECTIVES: Assess the impact in terms of quality of life (QoL) of ALIIBI (Extract of green tea & Parsley essential oil) in patients suffering from halitosis. METHODS: An observational, longitudinal and prospective assessment, carried out in a pharmacy on subjects suffering from halitosis who were seeking an immediate remedy. The questionnaire used was the Halitosis Quality of Life Questionnaire (HQQL); the only validated questionnaire regarding halitosis. RESULTS: A total of 311 subjects suffering from halitosis were included. The average age was 45.07 ± 15.99 years. The sex ratio was 29.9% for men versus 70.1% of the women. Also, 71.06% of the subjects exer-
cised a professional activity. Seventy percent claimed they brushed their teeth after each meal; 44.23 of the subjects used accessories (26% inter- dental toothbrushes, 29% dental floss and 11% tongue scrapers). Sixty-six percent stated they became aware of halitosis themselves, 30% from a third party. Halitosis had been present for approximately 5 years; 11% had consulted only their halitosis. The overall HQQL score was 14.68 ± 7.86, after 7 days of treatment by Extract of green tea & Parsley essential oil, the score was 10.3 ± 8.00. The improvement was statistically significant (p < 0.01). The evolution of each of the 4 dimensions (“daily life”, “mental”, “emo-
tional”, “social and work”) also improved. The everyday life score changed from 2.9 ± 2.10 to 1.39 ± 1.92, the Emotional score changed from 2.46 ± 2.10 to 1.81 ± 1.95, the Mental score changed from 4.43 ± 2.73 to 3.22 ± 2.80 and the Social & Work dimension score changed from 4.92 ± 2.30 to 3.48 ± 2.60 (CONCLUSIONS): since using Extract of green tea & Parsley essential oil, 90% of subjects suffering from hali-
tosis have experienced an improvement in their everyday lives, 83% feel more at ease in their cultural and social activities. These results confirm the improvement of QoL among subjects suffering from halitosis after 7 days of treatment.

PHC7

DEVELOPMENT AND VALIDATION OF SPECIFIC HEALTH RELATED QUALITY OF LIFE QUESTIONNAIRE FOR HALITOSIS: THE HALITOSIS QUALITY OF LIFE QUESTIONNAIRE (HQQL)

Task C. Maso H†

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OBJECTIVES: Halitosis or bad breath is a chronic condition affecting a large fraction of the adult population. The aim of this study was to develop and validate a halitosis-specific quality of life questionnaire for adults. METHODS: Development and valida-
tion of the questionnaire have been performed using the standardized multi-step method. RESULTS: A total of 169 eligible patients answered both questionnaires at day 0, 30 subjects had the same a second time at day 7. The initial pool of questions comprised 24 items. Two items were deleted, the first was considered redundant and the due to ceiling effect, i.e., a ceiling effect means that most patients are not worried by a particular item. This resulted in a questionnaire of 22 items. Eleven items were allocated to each of the two domains. None of the items allocated to a domain showed a significantly higher correlation with the total score of the other domain. CONCLU-
SIONS: The final version of the HQQL contains 22 items covering 2 domains of quality of life assessment, namely “social and daily life activities” and “personal domain.” The questionnaire is designed for self-administration. It showed both good reliability and construct validity. The intraclass correlation indicates good responsive-
ness of the HQQL. To be valid, a questionnaire needs to be easily understood and completed by the population concerned. In summary, the health-related Quality of Life Questionnaire for halitosis is a valid instrument for use in adults complaining of bad breath. It is the first ever to have been developed with this specific aim.

HEALTH CARE INTERVENTIONS – Health Care Use & Policy Studies

PHC8

REGIONAL DISPARITIES AND ECONOMIC OUTCOMES ASSOCIATED WITH MINIMALLY INVASIVE AND CONVENTIONAL SURGERIES OF THE CHEST, ABDOMEN, AND PELVIS

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OBJECTIVES: Rising health care expenditures remains a major policy concern. Research suggests that regional variations in spending contribute to this crisis. Regional variations in the utilization of minimally invasive and conventional approaches to common surgeries is an extension of this paradigm, and likely con-
tributes to disparities in health outcomes and expenditures across the nation. This study examines these factors through the lens of the following procedures: colectomy, laparoscopic and vaginal hysterectomy, cholecystectomy, appendectomy, bariatric surgery, breast biopsy, ventral hernia repair, and lung reduct-
sion surgery. METHODS: We performed a retrospective cohort analysis using medical and pharmacy claims data from a large national health plan. Data on patient age, geographic residence, and severity were extracted. Geographic regions were cat-
egorized as West, Midwest, Northeast and South. Outcomes of interest included intraoperative and post-operative complications, length of hospital stay, infection rates and associated antibiotic utilization, and readmission rates. Total expenditures for each procedure utilization directly associated with a patient’s surgery were estimated. Generalized linear models were constructed using a gamma distribution and log link function to estimate the effect of surgical approach on major outcomes while adjusting for other factors. RESULTS: Regional variations in utilization of laparoscopic and open surgeries are most pronounced for colectomy, hysterectomy, and bariatric surgery. Smaller but still significant variations in the utilization of minimally invasive and conventional esophageal fundoplication, appendectomy, and breast biopsy were also observed. Colectomy, vaginal hysterectomy, esophageal fundoplication, chole-
cyctectomy, appendectomy, breast biopsy, and lung reduction surgery were associated with lower follow-up health care expenditures when a minimally invasive route was used. CONCLUSIONS: Significant regional variations in the utilization of minimally invasive and conventional approaches to common surgeries exist in the United States. To the extent that, surgical approach impacts infection risk, complications, length of stay, and other metrics, these variations contribute to disparities in health outcomes and expenditures.

MUSCULAR-SKELETAL DISORDERS – Clinical Outcomes Studies

PMS1

INCREASED STANDARDIZED MORTALITY RATIO IN WORKERS WITH PERMANENT OCCUPATIONAL DISABILITY OF LOWER LIMB: A FOLLOW-UP STUDY OF 21 YEARS

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OBJECTIVES: This study intends to determine if there is increased mortality for dif-
ferent causes among workers who permanently lost lower limb occupational dis-
sability. METHODS: We collected all cases of permanent occupational disability from the database of compensation claim of Bureau of Labor Insurance between 1986 and 2006, which were linked with the national mortality registry to obtain the person-
years at risk for different calendar periods. The standardized mortality ratios (SMR) for workers with permanent disability of upper and lower limbs were calculated to estimate the risk of mortality due to different causes in comparison with the general population of Taiwan. The software package of LTAS established by the National Institute of Occupational Safety and Health of the United States was employed for the above calculation. RESULTS: We found significantly higher SMR in the following causes of death for workers sustained a permanent occupational disability: Gastroin-
testinal cancers (SMR = 1.28, 95% confidence interval (CI) = 1.02-1.59), benign tumors(MSMR = 7.38, 95% CI = 3.81-14.54), diabetes mellitus (SMR = 2.55, 95% CI = 1.92-3.31), hypertension and stroke (SMR = 1.42, 95% CI = 1.06-1.86), suicide (SMR = 1.92, 95% CI = 1.19-2.93), injury (SMR = 1.88, 95% CI = 1.22-2.78), respiratory diseases (SMR = 2.09, 95% CI = 1.54-2.78), the digestive system diseases (SMR = 1.36, 95% CI = 1.02-1.77), and chronic kidney diseases (SMR = 2.30, 95% CI = 1.47-3.92). Workers suffering from permanent disability of upper limbs only showed an increased SMR for digestive system. CONCLUSIONS: Workers with per-
manent lower limb occupational disability have higher risks of digestive cancer, injury, suicides, diabetes, and vascular diseases, which might be related to a general lack of exercise and should be considered in the process of rehabilitation and/or health promo-
tion for these populations.

PMS2

GOUT AND THE RISK OF ACUTE MYOCARDIAL INFARCTION AMONG ELDERLY WOMEN

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OBJECTIVES: Gout is a common inflammatory arthritis associated with hyperuricemia. Despite the substantial prevalence of gout among ageing women, little is known about associated cardiovascular risks in this population. Previous studies that have shown an association between gout and acute myocardial infarction (AMI) have been limited to men. Our objective was to evaluate the association between gout and non-
fatal AMI among elderly women, aged 265 years, and compare findings in men.

METHODS: We conducted a case control study nested within a population-based gout cohort in the British Columbia Linked Health Database. Over a 12-year follow-
up, we identified incident cases of nonfatal AMI from hospitalization data and matched with controls according to age, gender, and length of medical record. Defini-
tions of exposure and outcome were physician-entered ICD-9 codes. Conditional logistic regression models were used to estimate the association between gout and AMI

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after adjusting for age, gender, gout treatment, comorbidities, and medication use. 

**RESULTS**: We identified 4821 AMI cases of which 1410 were women. The adjusted odds ratio (OR [95% CI]) of AMI among women with gout was 1.62 (1.21–2.16), higher than the adjusted OR for men (1.12 [0.99–1.26]; p-value for interaction <0.01). When comparing both women and men in the analyses, we found an overall adjusted OR of 1.15 (1.06–1.25). CONCLUSIONS: Using population-based data, we found a 62% increased risk for AMI among elderly women with gout, and a 15% increased risk for elderly gout patients overall. The association between hyperuricemia, a known predictor for gout, and cardiovascular disease provides a potential explanation for our findings. Gender differences in serum uric acid levels and metabolism may further explain the difference in risks between women and men. Findings provide support for the aggressive management of cardiovascular risk factors in gout patients.

**COMPARISON OF 3 COMORBIDITY MEASURES AFFECTING PHYSICAL FUNCTION AND QUALITY OF LIFE FOR PATIENTS WITH ANKYLOSING SPONDYLITIS**

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**OBJECTIVES**: In clinical studies, comorbidity measurement refers to assessment of total burden of illnesses across multiple health conditions unrelated to the patient’s disease under study. In non-randomized clinical studies and epidemiology studies, adjustment for comorbidity is often undertaken to ensure outcomes are not directly affected by comorbidities. This analysis compared 3 measurements of comorbidities and captured physical function and quality of life with data from a randomized controlled trial of adalimumab in ankylosing spondylitis (AS). METHODS: Data were derived from the Adalimumab Trial Evaluating Long-Term Efficacy and Safety in AS (ATLAS). Comorbidity indices at baseline were calculated as Chronic Disease Score (CDS), number of separate prescription medications (prescription count), and number of concurrent illnesses (concurrent illness count). Medications taken specifically for the treatment of AS were excluded from the CDS and prescription medication count calculations. Univariate associations between each of the 3 indices and a physical function index (SF-36 PCS) and AS disease-specific quality of life (ASQL) at Week 12 were assessed. Correlations with each comorbidity measurement were ascertained. Model selection (Alkaike’s Information Criterion [AIC]) was used to identify the best comorbidity measure for predicting SF-36 PCS and ASQL. RESULTS: A total of 315 patients were included in the analysis. Their mean age was 42.2 years, and most were male (74.9%). At the univariate level, all 3 indices were significant predictors of SF-36 PCS score (p < 0.02). However, only CDS and prescription medication count were significantly associated with ASQL at Week 12. All 3 indices were well-correlated with each other (ranging 0.750–0.917). The AIC model demonstrated that CDS was the best predictor of SF-36 PCS and ASQL. Prescription count was the second-best ranked measure for both outcomes. CONCLUSIONS: The CDS is a suitable measure for comorbidity adjustment in examining physical function and quality of life for AS patients.

**DEVELOPMENT OF TESTS FOR DIAGNOSIS OF RHEUMATOID ARTHRITIS**

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**OBJECTIVES**: New therapeutic options for rheumatoid arthritis (RA) have shifted the focus of treatment to early, aggressive intervention aimed at preventing further joint damage. However, early diagnosis has proved challenging, and recent efforts have been made to identify new diagnostic tests. We systematically reviewed the literature to assess the current status of tests for early diagnosis of RA. METHODS: We searched English-language MEDLINE-indexed publications in the 5 years prior to August 2008 concerning tests and biomarkers for early diagnosis of RA. We also searched non-MEDLINE-indexed sources such as organization websites, meeting abstracts, and governmental publications using the same keywords. RESULTS: We identified 94 primary studies from MEDLINE pertaining to tests or biomarkers for early diagnosis of RA. Non-MEDLINE sources yielded an additional 36 articles for a total of 130 reviewed for this study. In practice, no single test has proved sufficiently sensitive, specific, or cost-effective for the diagnosis of RA. Tests currently in use, including the acute phase bio-markers erythrocyte sedimentation rate and C-reactive protein and the autoantibody rheumatoid factor (RF), are relatively nonspecific for RA. Recent efforts have focused on identifying new biomarkers with greater RA specificity. These include autoantibodies, immune system biomarkers, and biomarkers of collagen breakdown and bone erosion. The autoantibody anti-cyclic citrullinated peptide (anti-CCP) offers high specificity, but lower sensitivity than RF. Newer-generation anti-CCP assays provide improved sensitivity over first-generation anti-CCP assays, but sensitivity still excludes their use as sole diagnostic tests for RA. The clinical utility of anti-CCP tests can be improved by combining with other assays such as RF, and provide particular value in predicting the development of persistent and/or erosive RA. CONCLUSIONS: Newer generations of the autoantibody anti-CCP assay offer high specificity for RA and appear promising as a diagnostic test in combination with other tests with greater sensitivity.

**A 2-YEAR EVALUATION OF INFliximab's EFFECTIVENESS IN THE TREATMENT OF RHEUMATOID ARTHRITIS IN ACTUAL PRACTICE**


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**OBJECTIVES**: To evaluate the long-term effectiveness of infliximab in the treatment of rheumatoid arthritis (RA) in the actual practice setting. METHODS: A retrospective chart review was conducted in six rheumatology clinics across the US. RA patients with a first infliximab encounter occurring between 2002 and 2004 were identified. Patients were required to have a minimum of 12-months of continuous records prior to the index infliximab date and were followed for up to 24-months after therapy initiation. Effectiveness was defined as reductions in joint pain, swelling, stiffness, and fatigue scores of ≥1 point (range from 0 to 10). Overall clinical improvement was measured as a combination of pain, swelling, stiffness, and fatigue scores. Wilcoxon Signed-Rank Tests were performed to test if there were statistically significant changes from baseline. Also, biomarker test results, C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR), were collected and compared to the baseline results. **RESULTS**: A total of 266 infliximab patients were identified (72.9% female; average