

expected LOS compared to baseline (OR = 0.791,  $p < 0.01$ ). Among patients who did exceed the expected LOS, Floseal patients did so at a reduced rate (IRR = 0.891,  $p < 0.01$ ). 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:** Floseal 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

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**OBJECTIVES:** Assess the impact in terms of quality of life 9QoL) of ALIBI (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 (HQLQ), the only validated questionnaire regarding halitosis. **RESULTS:** A total of 311 subjects suffering from halitosis were included. The average age was  $45.07 \pm 15.99$  years. The sex ratio was 29.90% of men vs 70.10% of women. Also, 71.06% of the subjects exercised 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 HQ22 score was  $14.68 \pm 7.86$ , after 7 days of treatment by Extract of green tea & Parsley essential oil, the score was  $10.23 \pm 8.00$ . The improvement was statistically significant ( $p < 0.001$ ). The evolution of each of the 4 dimensions (“daily life”, “mental”, “emotional”, “social and work”) also improved. The everyday life score changed from  $2.95 \pm 2.10$  to  $1.89 \pm 1.92$ , the Emotional score changed from  $2.46 \pm 2.10$  to  $1.81 \pm 1.95$ , the Mental score changed from  $4.45 \pm 2.75$  to  $3.22 \pm 2.80$  and the Social & Work dimension score changed from  $4.92 \pm 2.50$  to  $3.54 \pm 2.60$ . **CONCLUSIONS:** Since using Extract of green tea & Parsley essential oil, 90% of subjects suffering from halitosis 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 (HQLQ)

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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 validation 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. Sixty-three did 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. **CONCLUSIONS:** The final version of the HQLQ 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 intra-class correlation indicates good responsiveness of the HQLQ. 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 contributes 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, esophago-gastric fundoplasty, cholecystectomy, appendectomy, bariatric surgery, breast biopsy, ventral hernia repair, and lung reduction 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 categorized 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 health care 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 esophago-gastric fundoplasty, appendectomy, and breast biopsy were also observed. Colectomy, vaginal hysterectomy, esophago-gastric fundoplasty, cholecystectomy, 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 different causes among workers with permanent lower limb occupational disability. **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: Gastrointestinal cancers (SMR = 1.28, 95% confidence interval (CI) = 1.02–1.59), benign tumor (SMR = 7.38, 95% CI = 3.19–14.54), 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 = 2.48, 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 permanent 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 promotion 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  $\geq 65$  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 5 controls according to age, gender, and length of medical record. Definitions of exposure and outcome were physician-entered ICD-9 codes. Conditional logistic regression models were used to estimate the association between gout and AMI