

Buddy Burkhalter, M.Stat

ASSOCIATE SCIENTIST

CONTACT INFORMATION

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PROFESSIONAL PROFILE

Buddy Burkhalter is an associate scientist at ToxStrategies specializing in biostatistics, bioinformatics, and statistical design. Mr. Burkhalter has experience in conducting survival analysis with longitudinal health study data, regression analysis (linear, logistic, probit, log-logistic), and developing statistical comparisons using complex health survey data (e.g. NHANES). Mr. Burkhalter is also skilled with methods in statistical epidemiology including determination of odds ratios, relative risk, tests of association, and incidence proportions (and associated confidence intervals), and identification of confounding variables. Mr. Burkhalter specializes in statistical genetics including DNA sequence analysis using Markov-chain models, linkage analysis for genetic association, and modeling of mutation rates. He is a graduate of Rice University where he earned his masters degree in statistics.

EDUCATION AND DEGREES EARNED

M.Stat, Statistics, Rice University, 2009

B.A., Mathematics and Classics, The University of Texas at Austin, 2008

PROFESSIONAL ASSOCIATIONS

American Statistical Association

SELECTED PROFESSIONAL EXPERIENCE

Conducted data analysis to determine dioxin and furan (PCDD/F) and PCB serum concentrations in the US population based on data from the National Health and Nutrition Examination Survey (NHANES).

Descriptive statistics were developed for specific subpopulations (age, race, smoking, gender) from 2001-2002 NHANES dataset for comparison to potentially exposed communities in the Midwest. Subsetting the NHANES data required the management of variance within a complex stratified survey design. Statistical calculations for the NHANES were performed using R.

Reviewed and critiqued OSHA's beryllium worker study methodology. Critique included a review of 12 models developed to characterize beryllium air concentration, rate of sensitization, and rate of onset of chronic beryllium disease. Coefficients of the models were hypothesis tested to determine whether OSHA's models were significant. Appropriateness of subpopulations was reviewed with regard to long and short term exposure, genetic factors, job description, and other work environment factors. Methodology to identify and correct for outliers was also reviewed.

Investigated the relationship between chromium concentrations in drinking water and the incidence of anemia and oral cavity cancer (OCC) using animal data from National Toxicology Program (NTP). Tests for association were conducted for chromium exposure and anemia, chromium exposure and OCC, and anemia and OCC. Logistic regression analysis was performed to determine which indicators of anemia are primary agents in the development of oral cavity cancer. Relationship between anemia and oral cavity cancer was investigated using test of mediation.

Survival analysis was conducted to determine survival and recurrence rates of soft tissue sarcoma patients based on age, gender, tumor size, tumor location, radiation treatment, and other factors. Kaplan-Meier survival curves were determined for death, local recurrence, and distal recurrence. Cox proportional hazard models were fit based on 8 covariates. The study concluded that stratification based on age was important, whereas radiation and recurrence of tumor were not significant in determining survival rate.