## *Factors Affecting Reno and Sparks Residents' Hospital Decisions*

**Abstract**

Nevada's rapid population growth places a strain on the ability of health care services to keep pace with patient demands. Little has been done to determine what influences patient decisions when choosing their health care providers and facilities. This issue is constrained by some individuals and families not having health insurance and those who do are often limited to the providers covered by their health plans. The purpose of this study was to determine which factors the public in one area of Nevada (Reno-Sparks) perceive most important to hospital choice, and how insurance type affects these factors. We conducted a random digit dial survey of 510 Reno and Sparks households asking respondents to rate, on a scale from 1 to 10, how important 12 factors were to their hospital decision. We also asked respondents what additional factors, if any, affect their hospital decision. Results show that when insurance providers limit hospital coverage, this does not affect the most or least important factors respondents consider. Respondents ranked as most important to their hospital decision good medical care, skilled doctors/nurses, and medical technology; whereas, relatively unimportant were the hospital's religious affiliation and whether a friend/family worked at the hospital. Results from open-ended responses revealed other important factors to be emergency room speed, cleanliness, and customer service (other than medical care). The results indicate that additional research should be conducted on emergent factors from open-ended responses.

**Learning Objective(s)**

Know which factors Reno and Sparks residents consider the most and least important to hospital choice.
Know which factors affecting hospital choice future research should focus on.

**Author(s)**

Clare T. Pettis, M.A.

Laura Davidson

Samuel C. Lindsey

Stephanie Brzezicki

***Student Outreach Clinic: Making a Lasting Health Care and Educational Contribution to Nevada***

**Abstract**

The University of Nevada School of Medicine's Student Outreach Clinic has provided basic healthcare services to the underserved, uninsured and indigent residents of the Truckee Meadows since it was established in 1996. Since its inception the Clinic mission of offering free access to healthcare services is entirely student-driven and dependent upon student and clinician volunteers. Supported entirely through grant funding from community and national agencies and philanthropists, the Clinic provided basic healthcare services to 526 patients in 2008, and provided immunizations to more than 350 children in the Reno/Sparks community. The majority of the Student Outreach Clinic's patients have no health insurance coverage and few options available for the most basic care. Consistent with the increasingly diverse population in our community, 68% of the Clinic's patients in 2008 were Latino (58%), African American (5%) and Asian (5%). Student volunteers who are fluent in Spanish translate for non-English speaking patients. In addition to monthly General Clinics, Pediatric and Women's Clinics, student volunteers provide complete physical exams for Head Start, for school, sports camps and for people who need documentation of a physical exam to qualify for employment. The Student Outreach Clinic is just one example of the merging of service, health care and educational enrichment. Students, motivated by reducing the disparities and lack of access to medical care, are contributing significantly to the health of northern Nevada.

**Learning Objective(s)**

Become informed of the significant difference a student-run program can provide to addressing health care needs in Nevada.

**Author(s)**

Peggy Dupey, PhD
Interim Associate Dean for Admissions and
Student Affairs
University of Nevada School of Medicine

### *Enhanced and Robust Bland-Altman Method of Agreement*

**Abstract**

Bland-Altman's analysis and plot are most common methods used to assess the relative agreement between two analytical methods that measure the continuous variables measured in the same scale. Many agreement studies have shown that using the t-test or the Pearson's product-moment correlation is flawed when measuring the agreement or detecting the bias. Bland-Altman proposed graphical techniques for analyzing method comparison and validation studies and many articles advocating their approach or variations of it have since appeared in many journals. The basic concept of Bland-Altman's approach is the visualization of the difference of the measurements made by the two methods, then plotting the differences (diff) or the bias (Y-axis) versus the mean (mean) of the two readings (X-axis). In addition, additional reference lines such as the zero bias line and 95% upper (0 + 1.96 Sdiff) and 95% lower (0 - 1.96 Sdiff) are also overlaid on the same scatter plot. When there is no systematic bias, it is easy to verify from the plot if the differences are symmetrical around zero. If there is no relationship between the differences and the averages, the agreement between the two methods may be summarized using the means and standard deviations test methods. Bland-Altman's plots have become an essential requirement in validity or method-comparison studies and Bland-Altman's original paper has been cited over more than 11500 occasions compelling evidence of its importance in medical research. However, some recent reports discussed the flaws of the Bland-Altman's graphical methods and advocate the use of regression approach especially when the bias distribution shows heterogeneous bias distribution. Therefore, I am proposing a robust enhanced Bland-Altman's analysis which combines a superior graphical display of bias distribution supplemented with a regression analysis between the diff and the standard measurement. The primary objective of this poster presentation is using advanced SAS statistical and graphical procedures, demonstrate our enhanced features of robust Bland-Altman's analysis and compare its performances with the original Bland-Altman's method using six diverse types of simulated data sets.

**Learning Objective(s)**

Use the proposed enhanced features of my Bland-Altman method of validation and determine whether the new method perform equally good as the standard method. Use the included code to run code and generate the enhanced SAS graphics as used in poster.

**Author(s)**

Ryan Dynesh Fernandez, BS Biochemistry
Graduate Student
University of Nevada Las Vegas

***Lifestyle Modification and Health-Related Quality of Life among NV Asthmatics***

**Abstract**

Background: Health related quality of life (HRQL) is an important outcome in asthma management, yet little is known about HRQL among Nevadans currently having asthma (NVA), or the relationship between healthy lifestyle habits (HLH) and HRQL among NVA. Objective: Assess the combined influence of demographic/socioeconomic status and lifestyle habits on HRQL among NVA. Methods: Weighted multiple logistic regression analyses were performed on Nevada BRFSS data (available years of 2000-2007 aggregated). HRQL was measured by self-rated health status, days in past month with poor physical and/or mental health and/or impaired activities (also dichotomized at 14 days). Lifestyle modification was measured by the number of HLHs including 5+ daily servings of fruits/vegetables, physical activity, and absence of smoking. Results: Age-adjusted prevalence estimates indicated a significant improvement in HRQL with increased healthy lifestyle habits among NVA. Adjusted for potential confounders and compared with NVA having none of the HLHs, those with all three HLHs were less likely to report poor/fair health status (adjusted odds ratio[AOR]:0.365; 95% CI:0.133-1), frequent physical distress (AOR:0.075; 95% CI:0.027-0.213), frequent mental distress (AOR:0.128; 95% CI:0.041-0.4), or frequent impairment of activities (AOR:0.123; 95% CI:0.03-0.504). Conclusion: Accumulation of healthy lifestyle habits was associated with better health-related quality of life among Nevadans currently having asthma. Further studies are needed to better understand the impact of socioeconomic, environmental and behavioral factors on the health care experiences and quality of life among asthmatics.

**Learning Objective(s)**

Use BRFSS data to evaluate the relationship between lifestyle habits and quality of life among interested populations

**Author(s)**

Jing Feng, MS
Biostatistician
Southern Nevada Health District

John Middaugh, MD
Community Health Director
Southern Nevada Health District

Wei Yang, PhD
Professor
University of Nevada, Reno

**Poster Session Abstracts**

***Structured Algorithm For Error Reduction in Chemotherapy Administration***

**Abstract**

Background. In spite of available technology and known factors resulting in medication errors, chemotherapy errors remain the major cause of iatrogenic patient morbidity in hospitals (Gilbar, 2001; Heidt et al., 2001). A major risk factor for chemotherapy errors is lack of standardization in administration (ordering, dispensing, administration, monitoring). High incidence of preventable medication errors continues to be a great concern to millions of Americans afflicted with cancer, due to the lack of ability to identify errors prior to the administration of chemotherapy agents. There are approximately 7,000 deaths per year in the United States attributed to incorrect prescribing or dispensing of drugs occurring mostly at the stages of ordering (56%), administration (34%), transcription (6%), and dispensing (4%) (Bourret, 1996; Oren, Shaffer, & Guglielmo, 2003; Kohn, Corrigan, & Donaldson, 1999). Significance. Use of the developed algorithm may lead to development of evidence-based strategies to decrease errors in chemotherapy administration in cancer patients. Methods. A comprehensive review of literature related to Chemotherapy Administration and medication errors was performed. Articles addressing error reduction and standardized verification of treatment/dosing were reviewed. Data sources examined reduced error rates, and consisted of books, articles, and abstracts from scientific conferences. Findings. Aggregate literature findings noted that approximately 28-56% of adverse drug events (ADE) are considered preventable. Specific findings from the Leapfrog Program were that Computer Prescribing Order Entry (CPOE) might avoid 522,000 serious medication errors annually, assuming a 55% of medication error rate (Birkmayer, 2000; Oren et al., 2003). Conclusion. Chemotherapy error reduction can be achieved through evidence-based education presented as an algorithm for the chemotherapy administration process. Standardization is a part of the organizational systems redesign through use of a structured algorithm for error reduction which can improve accuracy in drug delivery and patient outcomes.

**Learning Objective(s)**

Use standardization and evidence-based practice to improve nursing clinical practice and patient outcomes

**Author(s)**

Marianne Bundalian Tejada, RN, PHN, MSN
Clinical Instructor
University of Nevada, Las Vegas

***Efforts to Increase Lead Screening Rates in Southern Nevada***

**Abstract**

Exposure to lead continues to be a public health concern, particularly for children. Despite efforts by the Childhood Lead Poisoning Prevention Program, data about childhood lead exposure in Nevada remains limited. Purpose: This study aimed to increase lead screening rates for children (1-6 years) in Clark County, determine possible sources of exposure, and provide education on the health hazards of exposure. Data will be compared to national averages and used to identify high-risk groups. Tailored prevention strategies will then be constructed to educate these identified groups. Method: Recruitment for the study occurred from October 2008 - June 2009 at Lied Pediatric and Kid's HealthCare Clinics. Parents/Guardians of 811 children completed questionnaires designed to help identify possible sources of exposure. Of the 811 children, 564 provided blood samples to be analyzed for lead. Results: The majority of participants were Hispanic (72.7%) and most were insured by Medicaid (70.9%). Of the reported Blood Lead Levels (BLLs), 93.8% were below detection limits (3µg/dL for venous or 3.3µg/dL for capillary draws). No BLLs were above the CDCs level of concern (10µg/dL). Conclusions: Data suggest that BLLs in Clark County children may be low. However, many responses to the questionnaire indicated that children put toys in their mouths (53.9%), have ingested at least one imported candy in their lifetime (41.6%), and have household members working with lead (22.3%). These results indicate opportunities for possible continued exposure and stress the need for continued screening and education. Future research opportunities are highlighted, especially regarding atypical sources and hazards from low level exposures.

**Learning Objective(s)**

Identify possible typical and atypical sources of childhood exposure to lead in Clark County . Understand that, while recorded blood lead levels were low, the opportunity for possible exposure remains high and suggests a need for continued screening and education efforts.

**Author(s)**

Mackenzie S. Burns, BA
Graduate Assistant
University of Nevada, Las Vegas

Diana Vereschzaginm MEd

Erika Torres, BA
Project Coordinator/Risk Assessor
University of Nevada, Las Vegas

Shawn L. Gerstenberger,PhD
Executive Associate Dean
University of Nevada, Las Vegas

***Mercury Concentrations in Muscle Tissue from Sportfish in Lake Mead, Nevada***

**Abstract**

The aim of this study was to determine the concentrations of mercury present in commonly consumed fish from Lake Mead and to identify if differences exist between the 4 major basins. To date no formal study utilizing United States Environmental Protection Agency (USEPA) approved methodology has been conducted to quantify the amount of mercury present in fish tissue from Lake Mead. Largemouth bass (n=49), striped bass (n=94) and channel catfish (n=78) were collected from selected sites in Boulder Basin, Overton Arm, Virgin Basin and Gregg Basin of Lake Mead. Muscle tissue was homogenized, digested and analyzed for mercury in accordance with USEPA Method 245.6. Mean total mercury concentrations were ($\bar{x}$ ±SD) 0.089± 0.065 µg/g, 0.154±0.127 µg/g and 0.098± 0.080 µg/g in largemouth bass, striped bass and channel catfish, respectively. An analysis of covariance (ANCOVA) indicated a significant difference between mercury concentrations among the three species ($F_{2,208}$= 22.448, $p< 0.001$). Contrasts revealed that each species differed significantly from each other ($p<0.050$). There was a significant overall difference in mean mercury concentration between fish from the four major basins of Lake Mead ($F_{3,208}$= 20.541, $p<0.001$). The mean mercury concentration in Boulder Basin was significantly lower than all other locations ($p<0.001$). Out of 221 samples analyzed, only 2 samples (both striped bass) were found to have mean mercury concentrations above the USEPA action level of 0.5 µg/g. There were no samples found containing concentrations above the Food and Drug Administration's (USFDA) maximum allowable mercury concentration in fish and food products (1.0 µg/g).

**Learning Objective(s)**

1)Understand the need for monitoring mercury concentrations in fish from local bodies of water. 2) Have a general idea of the species and locational differences in mercury concentrations from popular sportfish from Lake Mead, Nevada.

**Author(s)**

Joanna L. Kramer, B.S., M.P.H.
Graduate Research Assistant
University of Nevada, Las Vegas

Shawn Gerstenberger, B.S., M.S., Ph.D.
Assistant Dean, Chair, Professor, Department of Environmental Health, School of Community Health Sciences
University of Nevada, Las Vegas

***The Importance of Health Literacy in Public Health***

**Abstract**

Health literacy relates to the ability to read, understand and effectively use health information. Seniors in general are at greater risk than the average population. While health literacy is essential to improve communication and health outcomes, the principles of health literacy may also be applied to areas other than health. This poster will (1) provide national data about health literacy, (2) review strategies to improve health literacy, (3) offer examples of ways health literacy could be incorporated into various trainings, and (4) discuss some outcomes of the Scholars in Health Literacy and Aging project.

**Learning Objective(s)**

1. Define health literacy and discuss national health literacy data
2. Review some health literacy principles

**Author(s)**

Patricia Swager, MEd
Director
University of Nevada School of Medicine, Nevada Geriatric Education Center

Phyllis E. Militello, MPA
Assistant Director
University of Nevada School of Medicine, Nevada Geriatric Education Center

Patricia Charles,DrPH
NGEC Evaluation Specialist
University of Nevada School of Medicine

***A Description of Community-Associated Methicillin-Resistant Staphylococcus Aureus***

**Abstract**

Methicillin-resistant Staphylococcus aureus (MRSA) infections are rapidly increasing in prevalence and severity. MRSA-related hospitalizations more than doubled from 1999-2005, from 127,036 to 278,203. Infections caused by MRSA are occurring in community- and hospital-based settings. Community-associated (CA) strains are causing outbreaks among sports teams, prison populations, and in other settings. CA-MRSA strains account for between 8 and 20 percent of MRSA infections in the United States and are the most common cause of skin and soft tissue infections in U.S. emergency rooms. In some settings, CA-MRSA isolates are causing more invasive infections than HA isolates. Colonization rates among healthy populations are rapidly increasing. A sequential cross-sectional study of nasal carriage of MRSA in healthy children revealed a greater than ten-fold increase in colonization rates over three years. A 2006 Southern Nevada Health District report on CA-MRSA surveillance in the area reported 1,014 SSTIs which were positive for MRSA in detention centers in Clark County between January 2004 and December 2005. CA-MRSA is developing resistance to other antibiotics, including erythromycin, clindamycin, tetracycline, and rarely vancomycin. Despite this trend, little research has been done on the effectiveness of prevention and outbreak control efforts. Previous efforts have focused on hospital-associated MRSA infections. One recent intervention that employed skin disease screening, personal hygiene, wound care, and antimicrobial therapy in a prison setting reduced infection rates to zero from 11.6 cases per 10,000 detainee-days. Further studies by public health professionals should assess interventions for the control and prevention of CA-MRSA in high-risk settings.

**Learning Objective(s)**

1. Identify CA-MRSA infections as a rapidly increasing source of skin and soft tissue infections.
2. Identify 3 populations at high risk for CA-MRSA infections.

**Author(s)**

Sheila G. J. Clark, BA
Master's Degree Candidate
Univeristy of Nevada, Las Vegas

Timothy Bungum, Dr.P.H.
Associate Professor of Health Promotion
Univeristy of Nevada, Las Vegas

***Trend Analysis of Health Indicators and Risky Health Behaviors in Nevada***

**Abstract**

In this study, NV BRFSS data from 1995-2007 is used to examine several health indicator variables, including: Access to health care, Asthma, Diabetes, Health status, Heavy drinking, Hypertension, Overweight, Obesity, Physical activity, and Smoking. SAS PROC REG, which employs Ordinary Least Squares (OLS), was used to identify trends in the health indicator variables of interest. In cases where OLS may not be capable of accounting for the correlated errors, SAS PROC AUTO REG was used to fit the model. In addition to determining the overall nationwide trends of the health indicator variables, this study also compared data from Nevada residents to national data and compared data from several regions within Nevada.

**Learning Objective(s)**

Understand the direction in various health indicator and risky behavior in Nevada compared to National results. This way, we will be able to tell whether Nevada is performing well or worst compared to National as well as compare the two main Statistical Areas (Las Vegas) and Reno-Sparks).

**Author(s)**

Moses A. Anabila, PhD Student
Statistical Lab Consultant and Coordinator
University of Nevada Center for Research Design
and Analysis (CRDA)

***This is Public Health: A Campaign to Increase Community Awareness***

**Abstract**

The goal of public health is to keep people safe and healthy through education, intervention, and services. Carson City Health and Human Services (CCHHS), in cooperation with the Carson City Municipal Government, launched a community-based initiative entitled 'This is Public Health' (TIPH). The purpose of this program was to inform Carson City residents of the scope, function, and benefits of public health in the community. CCHHS's initiative is based around the TIPH sticker campaign, developed in 2008 by the Association of Schools of Public Health (ASPH). The nationwide ASPH campaign highlights public health activities and services that people utilize daily in their communities. The stickers used by CCHHS were provided, free of charge, from ASPH. These stickers were placed around Carson City to highlight examples of public health. Through a combination of stickers, media, and support from community leaders, the TIPH campaign is intended to raise awareness and provide a constant reminder to the community of the impact public health has in their lives. TIPH includes a multi-media component intended to distribute information about public health activities and to inform the public of upcoming events and ongoing services in the area. Carson City TIPH has gained support from City officials, local area businesses, schools, and coalitions. TIPH provides a vehicle for public health promotion that can be easily integrated into any community infrastructure.

**Learning Objective(s)**

Understand how to adapt a national campaign for implementation for a local community

**Author(s)**

EJ Maldonado, MA
Tobacco Prevention Coordinator
Carson City Health and Human Services

Cortney Bloomer, MPH, CHES
Health Educator/Public Information Officer
Carson City Health and Human Services

***Breast Pathology & Mammogram Adherence Among Rural Nevadans Exposed to Radioactive Fallout from the Nevada Test Site***

**Abstract**

The United States conducted a series of aboveground nuclear weapons tests at the Nevada Test Site (NTS) from 1951 to 1962. Many of these tests released substantial amounts of radioactive matter into the atmosphere, and the material reached the ground as nuclear fallout. In 2006, the Nevada Radiation Exposure Screening and Education Program (RESEP) project was initiated to collect information on Nevadans who lived in downwind communities while nuclear weapon testing was taking place at the Nevada Test Site (NTS). The Nevada RESEP project has since then conducted medical screenings on over 800 Nevadans with exposure to nuclear fallout. There is good evidence to support that certain cancers are more common in individuals who have been exposed to radiation. Breast cancer has been shown in previous studies to be more common in a radiation exposed population. However, such data has never been collected on Nevadans residing downwind from the NTS. Using information obtained by RESEP screenings, a retrospective chart review was used to collect information on age of exposure to radiation and breast pathology occurrence rate among screened individuals. Data was then compared with national statistics. The chart review also included a review of routine mammography screening rates among rural Nevadans. The effects of radiation on breast pathology prevalence and overall mammography adherence in rural communities will then be analyzed and the results will be presented in this study.

**Learning Objective(s)**

1. To be able to know the prevalence of breast pathology among a group of rural Nevadans exposed to radioactive fallout from the NTS.
2. To be able to know the rates of mammography adherence in a group of rural Nevadans.

**Author(s)**

Karishma Bhardwaj, BS, 2nd Year Medical Student
University of Nevada School of Medicine

Thomas Hunt, M.D.
Associate Professor & Principle Investigator of
Nevada RESEP Project
University of Nevada School of Medicine, Dept. of
Family & Community Medicine

**Poster Session Abstracts**

***CUT-IT-OUT - A State of Nevada Domestic Violence Awareness Collaboration***

**Abstract**

The CUT-IT-OUT program is dedicated to mobilizing salon professionals to fight the epidemic of domestic abuse in communities throughout the United States. CUT-IT-OUT is a prevention strategy that focuses on building awareness of the pervasive nature of domestic violence. The program educates salon professionals to recognize the signs of abuse in their clients, to respond appropriately, and to safely refer clients to resources that can help them. The National CUT-IT-OUT campaign is a project of the Salons Against Domestic Abuse Fund, sponsored by the National Cosmetology Association and Southern Living At HOME. The Nevada CUT-IT-OUT Campaign is a collaboration of three agencies: The Office of the Attorney General Catherine Cortez Masto, the Nevada State Board of Cosmetology and the Nevada Network Against Domestic Violence. The Campaign includes: Training of Domestic Violence advocates and other domestic violence experts to facilitate the one-hour CUT IT OUT seminar for salon professionals (as of July 2009 - there are 18 training facilitators in Nevada). Distributing campaign information to each licensed salon in the state (the distribution of 2000 bags begins July 21, 2009). Coordinating and supporting CUT-IT-OUT seminars for salon professionals, and for students of cosmetology schools throughout the state (as of July 2009, 177 salon professionals have attended a seminar in Nevada). Distribution of the CUT-IT-OUT materials and press events to launch the campaign in Las Vegas, Reno and Carson City.

**Learning Objective(s)**

Identify essential components of a statewide public health campaign. Identify successful strategies for a statewide public health collaboration.

**Author(s)**

Kareen Prentice
Domestic Violence Ombudsman
Office of the Attorney General

Vincent Jimno
Executive Director
Nevada State Board of Cosmetology

Sue Meuschke
Executive Director
Nevada Network Against Domestic Violence