



THE UNIVERSITY OF ARIZONA

**Mel & Enid Zuckerman
College of Public Health**

Spring 2020

**MPH Internship Virtual Presentations
Abstract Booklet**

Contents

	<u>Page</u>
Acknowledgements	3
Virtual Presentations	4
Presenters	5
Abstracts	
Biostatistics	8
Environmental & Occupation Health / Industrial Hygiene	12
Epidemiology	18
Family & Child Health - Maternal & Child Health & Global Health Tracks	28
Health Behavior Health Promotion	42
Health Services Administration	57
MD/MPH Clinical Leadership	68
One Health	82
Public Health Policy and Management	87
Public Health Practice	91
The MPH Internship Experience	99

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Virtual Presentations

We invite MEZCOPH faculty, staff, students, and alumni, as well as our wonderful internship preceptors and community members to view as many presentations as possible. These presentations terrifically highlight the depth and breadth of work that our students do with local, national, and global communities.

This page will be available for asynchronous viewing of student presentations until Friday, May 15th.

Presentation website:

<https://publichealth.arizona.edu/spring-2020-mph-internship-presentations>

For each presentation viewed, please complete a brief survey to provide valuable feedback to the presenters. This feedback is anonymous.

Presentation Feedback form:

https://uarizona.co1.qualtrics.com/jfe/form/SV_0NBAg6M3LFFaK7r

We appreciate your participation in the Spring 2020's MPH Internship Virtual Conference format!

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BIOS – Biostatistics

EOH – Environmental and Occupational Health

EOH IH - Environmental and Occupational Health Industrial Hygiene Track

EPI – Epidemiology

FCH MCH - Family and Child Health, Maternal and Child Health Track

FCH GLOBAL - Family and Child Health, Global Health Track

HSA – Health Services Administration

HBHP - Health Behavior Health Promotion

MD/MPH- Medical Doctor/Master of Public Health

PHP - Public Health Practice

PHPM – Public Health Policy & Management

MPH Biostatistics

Abstracts

IDENTIFYING GENETIC VARIANTS THAT MODIFY THE EFFECTS OF HBA1C LEVELS ON COMPLICATIONS OF DIABETES MELLITUS. Aubrey Jensen. Tucson. MPH Internship Committee Chair: Edward J Bedrick PhD. Site and Preceptor: Phoenix VA Health Care System – Jin Zhou, PhD.

Background: Previous research examining the effects of maintaining strict glycemic control in individuals with Type II Diabetes has shown varied effects on the incidence of macro and microvascular outcomes. It is possible that tight glycemic control may only be beneficial in a subset of individuals most susceptible to vascular damage from hyperglycemia. We aimed to identify genetic factors that show differential risk across glycemic control levels on cardiovascular outcomes, diabetic eye disease, kidney disease, and mortality in Diabetics. Methods: We performed genome-wide association tests (logistic regression) for interaction between elevated HbA1c(>6.5%) and biallelic variants, controlling for age, sex, BMI, and population structure via PCA. We used imputed and hard-called variants from the UK Biobank cohort, which included 23,382 Diabetics of European genetic ancestry. We performed sample and variant based quality control for minor allele frequency, imputation information scores, cryptic relatedness, and missing rates. Outcomes were determined by ICD codes from the medical and death records. Results: We examined nine phenotypes and identified one significant interaction for Stroke (rs28707695, $p= 1.27E-8$), at a locus near the gene integrin beta 8 on chromosome 7, which has previously been associated with arteriovenous malformations. A genetic region on chromosome 14 was also identified reaching genomic significant level. Several other genes were identified for potential interactions for unstable angina, diabetic eye disease, and mortality. Given large amount tests conducted and relatively small sample size for genetic interaction, our analysis was underpowered at a genome-wide significance level of $5E-8$. Future meta-analysis and network analysis to incorporate information from other cohorts will be conducted.

ACUTE KIDNEY INJURY PREVALENCE AMONG U.S EMERGENCY DEPARTMENTS. Nageena Khalid. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Edward J Bedrick PhD. Site and Preceptor: Online/New York/Tucson – Umar Zahid, MPH, MD.

Introduction There is limited knowledge on the national trend of utilization of United States (US) emergency departments (ED) for acute kidney injury (AKI). The objective of this study was to investigate the national trend of AKI visits to ED in the US along with its associated morbidity, outcome and healthcare burden. **Methods** The National Emergency Department Sample (NEDS) was used for this study from 2010–2016. The discharge–weight variable was used to estimate the national trend of AKI. Logistic regression was used to estimate mortality among patients with AKI, in–hospital admission, length of stay, and healthcare burden. **Results** 537,845 patients (≥ 18 years) visited ED from 2010–2016. The prevalence of AKI was 24.5 % (n=131,772). Co–morbidity associated with AKI were: sepsis, heart failure, and diabetes (OR: 1.1). Furthermore, the odds of hospitalization were higher among patients with AKI (OR: 3.5) after adjusting for sex, age and co–morbidity. Mortality among AKI patients was higher among older individuals but was not significant. **Conclusion** AKI was found to be significantly associated with sepsis, heart failure, and diabetes. AKI was found to be significantly associated with higher odds of hospitalization and insignificantly with elder patients.

LAND USE REGRESSION FOR AIR POLLUTION ESTIMATES FROM 2006 IN MARICOPA COUNTY.
Mehul Kishor Mehta. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee
Chair: Edward J Bedrick PhD. Site and Preceptor: University of Arizona MEZCOPH – Melissa
Furlong, PhD.

Land use regression (LUR) is a method of predicting spatial variability of air pollution to estimate exposure. We aimed to establish an LUR model of particulate matter (PM10) concentrations in Maricopa County, Arizona from 2006 with data collected from the US Environmental Protection Agency Air Quality System database. The annual average air pollutant concentrations from 20 air quality monitoring sites was calculated. Manually collected data on traffic or land-use related variables which are established predictors of PM10 included roadways, railroads, bus routes, elevation, and green space. The land-use variables were computed within buffers of sizes ranging from 100m to 3000m. Data analysis was carried out using R software (version 3.6.1) and its spatial analysis packages (sf, raster, sp, rgdal, leaflet, and mapview).

MPH Environmental & Occupational Health / Industrial Hygiene

Abstracts

PILOT STUDY: IMPACT OF A HAND SANITIZER ON HAND HYGIENE IN FOOD SERVICE ESTABLISHMENTS. Melissa G Cruz. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Kelly Reynolds MSPH, PhD. Site and Preceptor: Environment, Exposure Science & Risk Assessment Center – Jonathan D Sexton, PhD.

Introduction: ESRAC's focus is interdisciplinary research that incorporates environmental research and its impact on health in coordination with industry. There is a lack of background information regarding the relative occurrence of bacteria on surfaces and hands of restaurant employees. Restaurants are contributors to the public's health through proper preparation, food handling, and maintaining clean surfaces. This study's objective was to determine the impact of an antibacterial hand soap compared to cosmetic soap on hand and surface bacterial counts. Methods: For this study, 5 food service sites participated. At each site, up to 5 pairs of hands and up to 10 fomites were swabbed per visit. Restaurants were visited once a week for 8 weeks during use of antimicrobial/cosmetic soap. Samples were transported on ice to the UArizona-WEST Center lab for processing of total coliforms and Heterotrophic Plate Count (HPC) bacteria. A two tailed t-test was used to determine significance. Results: For total coliforms and HPCs, there was no statistically significant difference between the means of cosmetic soap and antibacterial soap (p-values 0.7938 and 0.3757, respectively). Though not significant, total coliforms had higher means and frequency of positives for worker hand samples from cooks (1.71, 81% respectively) and dishwashers (1.81, 94%) during cosmetic soap use. Discussion: This study's findings found no significant difference between the means of antibacterial and cosmetic soap for both HPCs and coliforms at participating sites. Differences in total coliform frequency of percent positives may be due to site specific culture, training, or behaviors; such as glove use, frequency and length of hand washing or cleaning of surfaces.

CREATING A NON-IONIZING RADIATION SAFETY PROGRAM AT THE UNIVERSITY OF ARIZONA. Leon Harris. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Stephanie Griffin PhD, CIH. Site and Preceptor: Research Laboratory & Safety Services – Ken Kerns, MS.

Non-ionizing radiation (NIR) is a physical hazard with the potential to induce immediate and latent adverse health effects. Research Laboratory & Safety Services (RLSS) has historically provided radiation safety services to the University of Arizona research community. The RLSS radiation safety program does not currently include a formal non-laser NIR Safety Program. The aim of the project was to develop a comprehensive NIR Safety program to include: incoherent visible and infrared light (VIR); radiofrequency (RF); microwave frequency (MF); electric and magnetic field (EMF) and, ultraviolet radiation (UV) that compliments existing RLSS radiation safety programs (e.g., radioactive materials, sealed radioactive sources, laser radiation, etc.) A comprehensive review of University regulatory obligations and safety best practice prompted the need for a formal UA NIR program with standalone policy to more appropriately protect workers and demonstrate compliance with local, state and federal requirements. Results of the project were the creation of a comprehensive NIR Safety Program for implementation across the UArizona campus.

PIMA COUNTY HEALTH DEPARTMENT: INTERNAL CLIMATE RESILIENCE ASSESSMENT. Andrew Hermanski. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Marc Verhougstraete, PhD. Site and Preceptor: Pima County Health Department – Kim Tham, MPH.

Beginning in September 2019, the Pima County Health Department would begin receiving funding from CDC BRACE to better help their efforts in combating climate change. Part of the requirements for receiving this funding included an internal assessment of current climate change related activities within the department. To conduct this assessment, two students worked with an employee of the health department to develop survey criteria. Questions were categorized into five different groups totaling 28 questions. The students then performed a 'ride-along' with employees of different programs within the health department to assess on-the-job related climate activities. After the ride-along, students then administered a survey to either the same employee, the program lead, or multiple members of the program. The data received from these surveys was then compiled and analyzed for trends. Once all the data was analyzed, a presentation was created and presented to different members of the health department and consisted of the collected data and future recommendations. A discussion was then held with attending employees. Results of this survey showed many trends such as high use of recycling practices and low numbers of sustainable buying patterns. Along with the above goals of this project, other smaller tasks were performed such as meetings with CDC members to discuss Building Resilience Against Climate Effects (BRACE) funding, creation of guidelines for use of funding, and attendance of various environmental health related activities around the city.

WINCHESTER HEIGHTS COMMUNITY CLEAN WATER PROJECT. Tun Pyai So Nef. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Marc Verhougstraete, PhD. Site and Preceptor: Southeast Arizona Area Health Education Center – Linda Cifuentes, MS.

Background: The farmworker community of Winchester Heights is an unincorporated community located in Cochise County, Arizona with 600 residents. The majority of residents have migrated from Mexico to work in the agricultural fields of southern Arizona. This community has been designated as a colonia which is defined as a community near US–Mexico border lacking basic infrastructure; such as potable water supply, adequate sewage system, paved roads and sanitary housing. The community is located in a high risk lead poisoning zip code in Arizona and the community has expressed concerns regarding drinking water quality. To address these concerns, this project’s primary objective was to quantify the concentration of E. coli and lead in drinking water using a community–based participatory approach. Furthermore, this project aimed to understand community member’s perspective of their drinking water and environmental health issues affecting their community. Methods: The sampling team trained five community health workers to help with administering questionnaires, collecting and analyzing drinking water samples from 34 homes, returning interpreted results back to the community, and delivering health curriculums of environmental health issues. Results: The concentrations of E. coli and lead in drinking water samples of 34 homes were below the standards set by the US Environmental Protection Agency. Community–wide and individual household results were delivered through home–visits and a community–wide workshop. A total of two environmental health curriculums were developed and delivered. Conclusion: This project has improved the community’s ability to advocate for change by providing the residents with drinking water quality knowledge and capacity to characterize the safety of drinking water from lead and bacteria.

ASSESSMENT OF A SUPERVISOR'S EXPOSURE TO METHYL ETHYL KETONE (MEK) AND METHYL ISOBUTYL KETONE (MIBK) DURING THE COATING OF AN 8.4M MIRROR. Austin Schaefer. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Boris Reiss, PhD, CIH. Site and Preceptor: Richard F. Caris Mirror Lab – Karen Kenagy.

Workers who coat the mirrors at the Richard F. Caris Mirror Lab are exposed to unknown concentrations of volatile organic compound (VOC) solvent vapors from the surface coating paint. Previous assessments used area sampling to estimate worker exposures. Area sampling has been the only authorized method of exposure assessment because of management's concern that personal sampling equipment is a hazard to the mirrors if it comes in contact with the glass. This assessment used a new strategy to estimate the actual exposure for workers on the mirror face. A combination of personal and area sampling showed the limitations of previous area sampling strategies. The average personal VOC concentration (12.4 ± 9.0 ppm) was found to be higher and more varied than the average area concentration (10.4 ± 2.7 ppm). The new approach showed that workers on the mirror are likely to be exposed to VOC concentrations that are much higher than previously measured. The Bayesian Expostats Tool Kit analysis of the area and personal measurements suggests a respective 27% and 60% probability of overexposure ($>OEL$). Additional controls are necessary to comply with regulatory standards. Personal monitoring is needed to determine the actual concentrations of VOC vapors to which mirror-coating workers are exposed.

MPH Epidemiology

Abstracts

CLIMATIC FACTORS AS A PREDICTOR FOR WEST NILE VIRUS IN MARICOPA COUNTY. Jordan Arias. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Kacey Ernst, PhD, MPH. Site and Preceptor: Maricopa County Department of Public Health – Aaron Gettel, MPH.

West Nile Virus is an arboviral disease that was reported in Maricopa County in 2003. The disease is caused by the West Nile virus and is typically transmitted through the bite of an infected mosquito. The primary vector for this disease in Maricopa County is *Culex quinquefasciatus*; however, in more rural areas *Culex tarsalis* also spreads the disease. Birds act as amplifiers for the disease, but humans are considered dead end hosts. While mosquito transmission is most common, the virus can be transmitted through transfusion of blood or blood products and organ transplants. Most people infected with West Nile virus will be asymptomatic with only 20–30% showing any symptoms at all. Among those who do show symptoms, less than 1% experience severe neuroinvasive disease including meningitis, encephalitis, and acute flaccid paralysis. Because of the large number of asymptomatic infections, incidence is difficult to estimate; however, it is likely around 2700 per 100,000 people in Arizona. Important factors in West Nile transmission are increased vector abundance and virus pathogenicity. These have been shown to be impacted by various climatic factors including temperature, rainfall, and vegetation coverage. Public health surveillance data for WNV was cleaned and spatially mapped. Analyses of the association between case data and weather patterns were conducted. These analyses were used to identify associations that could be useful for predictive models. The products created include a report and a literature review in order to assist Maricopa County Department of Public Health to collaborate with CDC to create predictive models for WNV specific to Maricopa County.

VECTOR MAPPING AND WEST NILE VIRUS SURVEILLANCE FOR THE PIMA COUNTY HEALTH DEPARTMENT. Adam Berryhill. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Kacey Ernst, PhD, MPH. Site and Preceptor: Pima County Health Department – Amanda Anderson, RS, MPH.

West Nile virus (WNV) surveillance and mosquito vector control conducted by the Pima County Health Department (PCHD) is imprecise and limited due to minimal staffing and random trapping practices along routine inspection routes. Due to this, countywide surveillance is inaccurate and insufficient. In partnership with PCHD, mapping of previous and current mosquito data was conducted in order to analyze trends relating to mosquito vector species spatial distributions in order to identify flaws in trapping strategies across Pima county and discover ways to improve WNV surveillance moving forward. First, a literature review was conducted to identify effective WNV surveillance strategies targeting *Aedes* and *Culex* species mosquitoes in a desert environment and compare to PCHD's current strategy to assess its flaws. Next, PCHD's mosquito data from 2016 through 2019 was retroactively mapped using Excel's 3D Mapping tool and ArcGIS Pro. In order to guide technicians in what regions to trap, hot spot analysis was conducted to detail locations of vector distribution and prominent clustering. Buffer analysis was then used to create zones surrounding potential sources of significant vector abundance to identify novel trapping locations. An analysis of the literature yielded systematic temporal trapping techniques at set locations to observe fluctuations in abundance and targeted trapping in vegetation significantly associated with vector species. GIS analyses results demonstrate that systematic trapping should occur within 800m of washes. These findings suggest that more regular and frequent surveillance techniques are necessary to more accurately assess the current status of West Nile Virus within Pima County. Community participation through fire station trapping may improve surveillance efficiency.

THE IMPLICATIONS OF PATIENT SATISFACTION SURVEYS. Jonathan M Bell. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Heidi Brown, PhD, MPH. Site and Preceptor: Health Services Advisory Group, Inc. – Amber Saldivar, MHSM.

Background: The undesirable financial incentives associated with provider reimbursement can influence treatment practices. Patient satisfaction surveys have thus become increasingly common in quantifying the patient experience to hold healthcare providers and insurers accountable. Methods: At Health Services Advisory Group, Inc., data validation activities were performed on patient satisfaction surveys of members enrolled in Colorado's Child Health Plan Plus (CHP+). Members were children aged 17 years or younger enrolled in the following health plans: Colorado Access, Denver Health Medical Plan (DHMP), Friday Health Plans of Colorado (FHP), Kaiser Permanente (Kaiser), and Rocky Mountain Health Plans (RMHP). Using frequency calculations and two-sample t-tests, 11 survey measures were assessed for the following analyses: trend over time, state aggregate comparison, and national benchmark comparison. Results: Trend analysis revealed that the Colorado CHP+ program state aggregate performed statistically higher in 2019 on six survey measures and statistically lower on five when compared to 2018 results (p -value < 0.05). For individual health plan comparisons with the state, Kaiser and RMHP performed statistically higher on two survey measures, Colorado access higher on one measure, and FHP lower on two measures (p -value < 0.05). For national comparison, the Colorado CHP+ Program aggregate did not score at or above the 90th national percentile on any survey measures. The results from these analyses were visually compared to those of lead survey analysts for validation. Conclusion: While patient satisfaction in the Colorado CHP+ program has improved since 2018, national comparisons show that the state is still below the 90th percentile national benchmark. Health plans may use these results for targeted improvement strategies.

UPDATING CLINICAL DECISION SUPPORT ALGORITHMS TO PREVENT DRUG-INDUCED HYPERKALEMIA USING THE CERNER ELECTRONIC HEALTH RECORD. Briggs S. Carhart. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Leslie Dennis, PhD, MS. Site and Preceptor: University of Arizona College of Pharmacy – Dr. Daniel C. Malone, RPh, PhD.

Background: Potassium levels in the blood need to remain in a specific range to maintain bodily functions. Drug-induced hyperkalemia ($K^+ > 5.0$ mEq/L) remains the major driver for potassium-related cardiac arrhythmias. While some medications are known to increase serum potassium levels by themselves, multiple drugs interacting with each other, such as Angiotensin-converting enzyme Inhibitors (ACEI) and Potassium-Sparing Diuretics (KSD), could exacerbate the risk of cardiac arrhythmia. Methods: A systematic review of the published literature was conducted using PubMed, Scopus, and Embase in June 2019 for studies evaluating serum potassium following the combination of ACEI and KSDs. Additionally, cohort analyses utilizing Cerner's Health Facts database of an inpatient population in 2017 ($n=2,624$) were performed using Logistic regression to prospectively assess risk of hyperkalemia per the patients' blood panel medication following medication exposure. Results: The systematic review found a mild increase in serum potassium with combined medication exposure of KSDs and ACEIs with a moderate risk for hyperkalemia. In the review, the study design was correlated with the result of the study, with cohort studies finding small change in potassium ($+0.4$ mEq/L) and case series finding a large change ($+3.0$ mEq/L). An $OR=2.47$ ($CI=0.49-12.50$) for hyperkalemia suggested a mild association between combined medication exposure of KSDs and ACEI/Angiotensin Receptor Blockers. Conclusions: Our results suggest a moderate risk rather than high risk for ACEI and KSD drug combinations. These results in combination with others may lead to improved trust of the Clinical Decision Support algorithms/systems.

VISUAL HAND HYGIENE INTERVENTION TO IMPROVE HAND HYGIENE COMPLIANCE AMONG HOSPITAL STAFF AT BANNER UNIVERSITY MEDICAL CENTER IN TUCSON, ARIZONA. Victoria Davis. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Katherine Ellingson, PhD. Site and Preceptor: Banner University Medical Center Tucson Campus – Brandie Anderson BS Biomedical Science, BS Nursing, RN, MPH, CIC.

Background: Healthcare-associated infections (HAIs) and associated complications can place a physical and financial burden on patients. Preventative steps can be taken to reduce the spread of HAIs, through infection control practices like hand hygiene (HH). Methods: At a level 1 trauma center hospital in Tucson, Arizona, Banner University Medical Center, served as the study site. Units were selected by previous infection status with 6 units having >1 infection in the previous 12 months and 6 control units. Randomized secret-shopper observational sessions were conducted to collect 1367 pre-intervention and 1257 post-intervention hand hygiene opportunities. After baseline data collection, a visual HH intervention was randomized to 3 >1 infection units and 3 control units, on the existing hand sanitizer dispensers. Observations included observation hour, date, occupation, hospital rounds, hospital room entrance or exit, hand hygiene compliance, and possible noncompliance reasoning. Logistic regression was utilized to assess the difference in compliance before and after the intervention and compliance among the >1 infection units and control units. Results: Overall HH compliance among all hospital units consisted of 30.7%, with compliance improving for both intervention and non-intervention units by 12.5% and 8.8% respectively after visual intervention; the improvement in HH compliance between the intervention and the control units was not statistically significant (OR=1.12, 95% CI=0.84-1.51, p= 0.44). Conclusion: HH showed an improvement in compliance in both intervention and control units following the implementation of the visual HH intervention, but the difference in compliance was not statistically significant. Additional research should be done on the efficacy of using visual interventions for hospital HH compliance.

CREATING A WEB-BASED VACCINE RESOURCE TO COMBAT VACCINE MISINFORMATION. Joseph Oliver Fong. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Elizabeth Jacobs, PhD. Site and Preceptor: March for Science, Southern Arizona – Josh Hoskinson, MS.

Vaccines are an integral part of public health, however recent increases in vaccine refusal and vaccine misinformation have created inroads for decreased vaccine coverage. Public health agencies and organizations have pushed for stronger promotional materials and web-based resources; however, we found these to be challenging to read, inaccessible, or difficult to navigate. Thus, there is a need for a more effective vaccine resource that allows for a safe space to learn about vaccines. The internship site was March for Science, Southern Arizona (MFS), a 501(c)(3) non-profit organization based out of Tucson, Arizona. One of the goals of this organization is to increase scientific literacy through community outreach and education, making MFS an ideal partner in the creation of a web-based vaccine resource. We collected information and research from major public health organizations on vaccinations and vaccination recommendations and condensed them into terminology that are easier to understand for the general public. We designed imagery and used pre-existing graphs to clarify major points. Finally, we utilized connections with Social and Behavioral Sciences Technological Services (SBS Tech) and faculty within the Department of Communication to design and host the website using official University of Arizona logos. A team of epidemiologists will review the website to ensure all information is correct and up to date. We hope to eventually bring in evaluation components such as surveys and focus groups in order to assess the effectiveness of the website. In addition to the website, we presented progress reports and research findings regarding vaccines and vaccine hesitancy to the MFS Board of Directors, stakeholders, and community members.

IDENTIFYING THE SPATIAL RELATIONSHIP BETWEEN LIVER CANCER, HEPATITIS C INFECTION, AND ENVIRONMENTAL CONTAMINATION IN GHARBIAH, EGYPT. Mariah Murray. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Robin Harris, PhD, MPH. Site and Preceptor: Gharbiah Cancer Society in Gharbiah, Egypt – Dr. Amr Soliman, MD PhD.

Background: Liver cancer has the highest cancer incidence in Egypt and is on the rise. Egypt is projected to have 35,000 cases by 2020 and 85,500 cases by 2050. Egypt also had the world's highest Hepatitis C infection prevalence in 2008 at 10%. Hepatitis C is the main etiologic infectious agent for liver cancer. Previous studies show high levels of heavy metal environmental pollution in the region of Gharbiah. The geographic relationship between Hepatitis C infection, heavy metal pollution, and liver cancer incidence in Gharbiah is assessed in this study. Methods: The Gharbiah Population-Based Cancer registry was used to determine the number of liver cancer cases each year from 1999–2010 and to abstract liver cancer patient data including occupation and geocoding variables. The population projection was calculated for the study years 1999–2010 using the 1996 and 2006 CAPMAS Census Data. Age, sex, and district-specific rates of liver cancer incidence were mapped to identify geographic correlation between heavy metal contamination and liver cancer cases influxes. Results: A total of 4,943 cases of liver cancer were identified from 1999–2010 in the Gharbiah population. Over 80% of liver cancer cases were male and 20% were female in the 8 districts of Gharbiah. The highest incidence rates were in Urban Elsanta and Urban Kotour. Liver cancer incidence was higher in urban areas of the Tanta, Mehalla, Kafr Elzayat, Zefta, Samanood, Elsanta, and Kotour districts. Conclusion: Further investigation of Hepatitis C distribution is necessary to study the clustering of infection rates in areas of high liver cancer incidence. The environmental factors contributing to the significantly higher incidence rates of liver cancer in Urban areas will be assessed in conjunction with soil scientists from Tanta University.

ASSESSING FRAILTY AND COGNITIVE FUNCTION IN AGING ADULTS UNDERGOING ABDOMINAL SURGERY TO PREDICT IN-HOSPITAL OUTCOMES. Martha Rocio Ruiz. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Leslie Dennis, PhD, MS. Site and Preceptor: Banner – University Medical Center/ Bioscience and Research Laboratories – Nima Toosizadeh, PhD.

Introduction: The demand of surgical procedures in older adults is increasing, however, geriatric patients are at higher risk of experiencing postoperative adverse outcomes. Frailty and cognitive impairment have been associated with outcomes in older surgical patients. Our purpose was to examine the association of frailty and cognitive impairment using a novel validated upper-extremity function (UEF) test with postoperative in-hospital outcomes.

Methods: UEF tests were administered within 24-hours after admission in patients ≥ 40 years old undergoing emergent abdominal surgery. Two UEF tests were administered; a fast 20-seconds(s) and a constant 60-s elbow motion, while the angular velocity was measured using two motion sensors placed on wrist and triceps of the dominant hand. The UEF frailty score (0:resilient – 1:frail) was calculated based on slowness, weakness, flexibility and exhaustion. The UEF cognitive score (0:cognitive normal – 1:cognitive impaired) was based on a dual-task performance involving elbow motion and counting backwards by 3-s. Outcomes included; extended length of stay, surgical complication, and death. Logistic regression was used to assess the relationship between UEF frailty and cognitive scores with surgical outcomes.

Results: Fifty participants (mean: 63 ± 10 years) experienced at least 1 outcome. Age and gender independently predicted in-hospital outcomes with a receiver operating characteristic area under curve (ROC-AUC) of 63% and 61%, respectively. The prediction of outcomes improved when UEF frailty and cognitive scores were included, ROC-AUC 82%.

Conclusion: Our results showed that frailty and cognitive impairment improved prediction of postoperative outcomes among aging surgical patients. Suggesting frailty and cognitive function assessment may be useful for surgical risk-stratification.

FACTORS ASSOCIATED WITH WEIGHT LOSS MAINTENANCE AMONG PARTICIPANTS OF A WEIGHT MANAGEMENT PROGRAM AT A COMMUNITY HEALTH CENTER IN TUCSON, ARIZONA. Melanie Walker. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Katherine Ellingson, PhD. Site and Preceptor: El Rio Health – Diane Haeger, MBA.

Introduction: Approximately two thirds of the United States is overweight or obese. Overweight/obesity is a risk factor for many chronic health issues, making weight a common concern among Americans. While many people are initially successful at losing weight, keeping the weight off long term is more difficult. Factors associated with weight maintenance success have not been established. For my internship, I examined baseline and follow-up data for participants in the Weight Management for Optimal Health Program at El Rio Health Center. My objective was to determine factors associated with weight loss maintenance. Methods: I included for participants who had completed both pre-program and post-program surveys, had an initial weight value at the start of the program, and had a recorded weight value two years post program (+/- 3 months). Of the 800 people who have been involved in the program, 100 participants met the inclusion criteria. I dichotomized patients into two groups: those who had lost and maintained a 10% weight loss versus those who had not. I then tested whether there were significant differences between the maintainers and non-maintainers using chi-square tests. Results: Most of our participants were women (92%) and 91% were white or Hispanic with 9% being black or another race. 72% were considered maintainers. No significant factors have yet been found between maintainers and non-maintainers. Conclusion: No significant factors were found to be predictive of sustained weight loss. The majority of women in our sample who completed El Rio's program were considered maintainers (72%) suggesting the effectiveness of the program itself for those who stay connected to the clinic. Further research is necessary to understand weight loss sustainability among the 88% of women lost to follow-up.

MPH Family & Child Health
Maternal & Child Health and Global Health Tracks

Abstracts

ADDRESSING THE GAPS IN SEXUAL ASSAULT RESOURCES FOR GRADUATE STUDENTS. Serena Bailey. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Mary Koss, PhD. Site and Preceptor: The Consortium on Gender-Based Violence – Elise Lopez, DrPH, MPH.

The Consortium on Gender-Based Violence at the University of Arizona works throughout the university on many areas of gender violence prevention, including sexual assault, using an interdisciplinary approach. Modalities include both research and providing resources for the community. They engage community partners and classrooms across campus in multi-faceted prevention efforts. The purpose of this internship focused on graduate students at the University of Arizona. The two objectives were first to increase awareness and accessibility of service availability. The second was to identify gaps in knowledge. To accomplish the latter goal a selective literature was done and a local practice resource assessment, and review of peer institutions' practices was conducted. The outcome was distilled into a policy brief. The brief focused on the current policies at the university, policies implemented at other universities, critical analysis and implications. The recommendations included adding a component to graduate student orientation with information on sexual assault and harassment resources both on campus and in the surrounding Tucson community. By providing the information, graduate students may be more likely recognize an incident as sexual assault or harassment, and as a result of their awareness, to utilize services if needed throughout their matriculation at the university. This guide and policy were sent out to the Graduate College and the Graduate and Professional Student Council with hopes to get this implemented in the future. To increase awareness, a comprehensive resource guide was created to advise curriculum development for the graduate orientation. In order to make that happen, the support of key personnel such as the president of the Graduate and Professional Student Council will be imperative.

IMPROVING THE HEALTH OF SINGLE MOMS IN POVERTY THROUGH A ECONOMIC INTERVENTION AND HIGHER EDUCATION OPPORTUNITIES. DEVELOPING A GIS RESOURCE MAP AND CONDUCTING A PROCESS EVALUATION OF A PILOT CHW CERTIFICATION PROGRAM. Rachel M. Barnett. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Maia Ingram, MPH. Site and Preceptor: Pima County Health Department & Kino Community Services and Employment Training – Bonnie Bazata, MA.

Tucson has a higher percentage of children in poverty (32.4%) and uninsured individuals (15.3%) in comparison with the average of 500 cities (22.8% and 12.9% respectively) that utilize Dashboard to track city health data.¹ The Pima County Health Department (PCHD) in collaboration with the Community Services, Employment and Training (CSET) offers the Mothers in Arizona Moving Ahead (MAMA) program, an intervention to improve health and economic outcomes for single mothers and their families. This project aimed to further the MAMA mission by increasing participant access to the needed resources. Additionally, the internship conducted a process evaluation of an effort to increase employment opportunity through a CHW certification pilot program. A bilingual GIS resource map with affordable housing, legal and counseling services was created according to the most commonly reported weekly needs throughout the first three months. The process evaluation identified multiple recommendations to improve future career training programs and certifications offered to MAMA participants through CSET. Housing stability was a major barrier for many participants. The lack of cohesive lessons, clear instructions, and timelines between CSET and Arizona Western College complicated participant success. Moreover, the evaluation identified that American Indian participants reported more barriers. Of the five American Indian participants that began the pilot program, only one was still attending by the midpoint of the year long program. Access to computers and tech proficiency were common problems. In order to ensure economic success and improve health outcomes, achieving housing stability and student preparation should begin months prior, preferably during the initial phases of MAMA, due to the complexity and variable needs of each participant.

CASE REPORTING FOR UNICEF NEPAL'S EMERGENCY PROGRAM. Charles Brands. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: John Ehiri PhD, MPH, MSc. Site and Preceptor: UNICEF Nepal – Sunita Kayastha.

Background: After the 7.8 and 7.3 magnitude earthquakes that affected Nepal on April 25th and May 12th 2015, many donor agencies within the country chose to shift their funding focus towards disaster risk reduction programming. UNICEF Nepal was awarded funding to implement a Child Centered Disaster Risk Reduction (CCDRR) program; to build resiliency and mitigate risks in vulnerable communities throughout the country. My role as a UNICEF emergency program intern was to document and report on CCDRR, Water Sanitation and Hygiene (WASH), Nutrition and Cholera prevention programming, for both public and donor relations. Methods: The UNICEF internship involved site visits to rural communities throughout Nepal, as well as within urban settings in Kathmandu, the capital of Nepal. Interviews were undertaken with these communities with the aim of documenting accurate, personable case reports for UNICEF's donor relations. This involved case narratives, need assessments and photo documentation of the CCDRR, WASH and Nutrition programs in multiple districts within Nepal. Results: Fifteen case reports were completed, documenting UNICEF's implementation of disaster risk reduction programming throughout the country. Site visits included needs assessments that helped to gage the progress of the CCDRR program in multiple communities. Conclusion: The fifteen case reports delivered to UNICEF could be used as an effective narrative for donors to read and better understand the impacts of their donations, as well as for public relations. It demonstrated the effective use of funding to help vulnerable communities become more resilient to potential future disasters, following the Hyogo Framework for Disaster Risk Reduction.

DOMESTIC VIOLENCE: FOCUSING ON VICTIM VOICE AND RADICAL LISTENING. Amna Chaudhary. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Mary Koss, PhD. Site and Preceptor: Casa de los Niños – Sean Lovitt, MBA.

Casa de los Niños (Casa) is a non-profit organization in Arizona with one mission—to promote family stability and the well-being of children in the community. Here we attempt to demonstrate radically listening to victim’s voice and utilizing community-based practice to better understand barriers in providing continuous and effective DV services in the Arizona community. The idea of putting survivors of DV at the center of service delivery was proposed to Casa as an effort to promote community-based participatory research (CBPR) and emphasize an ecological approach to this public health issue. We reached out to the Emerge! Center Against Domestic Abuse—Casa’s partner agency—about holding listening sessions with victims of DV. A detailed proposal for this project was created to gain approval from the members of the Quality Review Committee at Casa. At the beginning of the listening session project, Casa received a blunt response from Emerge! stating that they were not open to such CBPR being done in their agency, as it would place the safety and anonymity of victims receiving their services at risk. The Quality Review Committee at Casa concluded that they were not onboard with leaving the “listening sessions” open-ended for victims to voice their concerns without limitation, and preferred for these sessions to encompass an interview format with the presence of a clinical therapist. These changes impede the sole purpose of the listening sessions, which is to accurately practice radical listening, to meet victims where they are, and to focus on victim-voice. Through this immersive experience in a DV service-providing agency, it becomes clear that there is a need for strengthening academic-community partnerships to provide adequate and effective victim-centered care to individuals from all backgrounds in the community.

IDENTIFICATION OF LOCAL SEXUAL AND REPRODUCTIVE HEALTH (SRH) INFLUENCERS VIA SOCIAL MAPPING IN LESOTHO. Jana Lee. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: John Ehiri, PhD, MPH, MSc. Site and Preceptor: UNICEF Lesotho – Maria Vivas, MPH.

Background: Lesotho has the second highest HIV prevalence in the world, with a quarter of its population (1 in 4) living with HIV/AIDS. While HIV related outcomes are improving in the population as a whole, this improvement does not translate for adolescents. In 2019, UNICEF Lesotho began implementing a community influencers program to reduce the risk of HIV infection, sexual violence, and improved learning outcomes and skills in children and adolescents. Methods: Working with UNICEF and the Ministry of Health, we developed an integrated multi-year pilot Social Network Mapping project in the Mokhotlong and Butha-Buthe districts of Lesotho. This project is a two-thronged approach that includes increasing knowledge through capacity building of stakeholders and gatekeepers, and ensuring that all systems including health, education, child protection, and HIV/AIDs are sensitive to the needs of children and adolescents in the delivery of quality services. The project's main objective was to identify the most influential and connected networks in a community and assess the influence of those networks on the beliefs, attitudes, and behaviors relating to family planning, SRH, and HIV/AIDs. Results: Social norms, such as limited discussion of SRH practices, continue to be a major bottleneck towards reduction of HIV infection among adolescents. Conclusion: Use of existing community networks, through community influencers, to disseminate knowledge will go a long way to promote discussion and awareness of SRHR issues, including the structural drivers of the epidemic. Employing these strategies of community mobilization, capacity building, development of partnerships with agencies and communities, and increased dissemination will promote and support desired behavior.

ADDRESSING CULTURAL AND LINGUISTIC BARRIERS BY IMPLEMENTING VISUAL RESOURCES AMONG NON-NATIVE ENGLISH SPEAKERS WHO RECEIVE E-WIC BENEFITS IN TUCSON, ARIZONA. Cassandra Lim. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: David O. Garcia, PhD. Site and Preceptor: Pima County Health Department – Soraya Franco.

As the Women, Infant, Children (WIC) offices serve an increasingly diverse client population, case management is challenged with a triad of cultural, linguistic, and nutrition literacy barriers in Tucson, Arizona. Reducing cultural and linguistic barriers is pivotal in increasing usage of electronic-WIC cards. The target population included non-native English speakers who qualify for WIC benefits and seek services to increase acquisition and application of WIC-approved foods. The internship objective was to increase nutrition literacy by creating pamphlet handouts of the WIC-approved baby foods and the five main food groups; protein, dairy, grains, fruits, and vegetables, that rely heavily on visual images as the primary method of communication. The internship pilot program was implemented at the Pima County Abrams WIC and Pima County East WIC offices; who receive the highest amounts of Latinx and other refugee populations in Tucson, Arizona. Case managers at the WIC offices offer substantial help in consulting and integrating cultural and linguistic considerations using this cost-effective tool to address clients' nutrition literacy. Qualitative data were captured in pre- and post-implementation surveys for WIC office case managers assessing existing needs and barriers. In addition, further allowing increased buy-in from stakeholders and evaluation of the visual tools. Major trends captured showed how implementing the visual resources aided in nutrition education and addressing cultural barriers in regard to WIC-approved foods. In closing, reducing cultural and linguistic barriers with efforts as such may help guide non-native English speakers in navigating e-WIC benefits and ultimately maximizing WIC support.

AN EVALUATION OF THE DEPARTMENT OF HOUSING & RESIDENTIAL LIFE'S RESOURCE PHARMACY PILOT PROGRAM AT THE UNIVERSITY OF ARIZONA. Andrea L. Martínez. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Velia Leybas Nuño, PhD, MSW. Site and Preceptor: University of Arizona, Department of Housing & Residential Life – Jamie Matthews, M.S.

Background: Many students living on the University of Arizona campus struggle to maintain access to sexual and reproductive health resources. Although Campus Health has resources, their availability is limited to certain days and hours thereby creating a gap in access. Housing and Residential Life, in partnership with the University of Arizona Planned Parenthood Generation Action (PPGen) organization, piloted a Resource Pharmacy in 2019. The purpose was to bridge the gap by providing free menstrual and sexual health products for students in on-campus housing. The goal of the internship was to determine the feasibility of continuation and expansion of the Resource Pharmacy (RP). Methods: The three RP locations were evaluated for the products offered, accessibility of products, and promotional and educational materials available. Engagement plans to connect the program to the on-campus living experience were made. Planning with PPGen executive members to determine long-term funding options occurred. Results: The RP is located in halls with different price points: Arizona–Sonora (\$\$\$), Babcock (\$), and Graham–Greenlee (\$\$). These halls, located in Park, Historic, and Highland districts respectively, were chosen in order to provide a better sample of the student population living on campus. Assessment affirmed gaps in functionality, accessibility, and sustainability. Previous promotional and educational methods did not engage residents or provide a platform for feedback. Limited funding and planning mitigated product distribution and accessibility. Conclusion: Inclusive and engaging programming is essential to maintain and expand the pilot program. Recommendations outlined in the final report provide programming examples, promotional material, funding guides, and a timeline for goals, objectives, and evaluation.

THE USE OF PUBLIC HEALTH COMMUNITY HEALTH NEEDS ASSESSMENTS RELATED TO THE DELIVERY OF COMPREHENSIVE MEDICATION REVIEWS (CMRS) TO IMPROVE ACCESS TO CHRONIC CARE MANAGEMENT (CCM) IN RURAL SETTINGS. Isabel Rose Paulk. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Sheila Parker, MS, DrPH. Site and Preceptor: Tabula Rasa Healthcare – Dr. Jennifer Bingham, PharmD, BCACP.

Background: Community health needs assessments (CHNA) can identify gaps in services in medically underserved areas and populations (MUA/P). Based on findings from the community assessment and comprehensive medication reviews (CMRs), organizations can plan and deliver cost effective health services to target populations. Methods: This retrospective review included patients who received a CMR from a national medication therapy management (MTM) provider in 2018. Researchers identified a non-rural and rural county to conduct a CHNA to identify health disparities and need for pharmacist delivered CMRs. Results: The proportion of CMR completions were higher among adults aged 65–74 ($p < 0.0001$) and rural status ($p < 0.0001$). CMRs were more likely to be completed by the patient’s caregiver/provider versus the patient ($p < 0.0001$). This is significant because information provided on CMRs will dictate needed healthcare services. New York County, New York was identified as one of the top three non-rural counties with the highest number of CMR completions. For comparison, Sullivan County was the nearest rural county. For eight consecutive years, Sullivan County ranked at the bottom for health, 61 out of 62 counties. This indicates that current healthcare practices are not improving health outcomes. According to the Behavioral Factor and Surveillance System (BRFSS) 8% of services are aimed to prevent mental illness and substance abuse, 19% to reduce health disparities, and 57% to prevent chronic diseases. Conclusion: Our findings suggest expansion of MTM telehealth services in rural areas will benefit chronic care management and improve communication among partnered clinicians serving their populations. Linking rural communities to innovative health services can maximize underutilized primary and secondary disease prevention services.

DESIGNING A SUMMER BRIDGE PROGRAM TO PROTECT MENTAL HEALTH AND PROMOTE NEW STUDENT-ATHLETE SUCCESS. Manpreet Sahnan. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Velia Leybas Nuño PhD, MSW. Site and Preceptor: University of Arizona C.A.T.S (Commitment to Athlete's Total Success) Clinical and Sport Psychology – Alex Auerbach PhD MBA.

Background: The mental health of student-athletes (SA) is a primary concern of the National Collegiate Athletic Association (NCAA) as SA struggle to manage academics and elite sports. However, few programs exist that address mental health concerns or support SAs during their transition from high school to college. The internship involves developing a bridge program for SA to participate in the summer before they enter their first year at the University of Arizona. The program is one of the few in the nation to address the mental health of SA and the only one to address the transition from high school to college athletics. Methods: A literature review explored the positive and negative influences of sports on the mental health of SA. Interviews with mental health counselors identified concerns specific to the program. A root cause analysis and a logic model set the foundation for the program design and determined topics of lessons. The logic model informed the development of overall goals and lesson-specific goals for program evaluation. Program evaluation includes pre and post-program surveys measuring self-efficacy and knowledge of mental health and university resources. Results: The literature review and counselor interviews modified the themes and identified potential collaborators for each lesson. Six topics were identified for the program content to be delivered one hour per week for 6 weeks before school. Coaches, counselors, and returning SA are facilitators for the program. The overall goal is for athletes to help themselves and for the athletics community to build a norm of wellness. Conclusions: The program introduces ideas of prevention and promotion where treatment is common in the sports medicine world. The program should next be implemented and evaluated.

ACTIVE RECESS PROGRAM: ADDRESSING CHILDHOOD OBESITY IN PIMA COUNTY. Stephanie Serrano. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Velia Leybas Nuño, PhD, MSW. Site and Preceptor: Pima County Health Department – Brian Eller.

Background The Pima County Health Department created the Active Recess program to promote physical activity during recess. Physical activity is important for youth development and physical and mental health. The purpose of the internship was to collaborate with Pima County schools to collect data about physical activity during recess among elementary school students. **Methods** The program provided recess carts that contained equipment to encourage physical activity. Health educators from the health department provided training to each school's health coordinators and teachers on the cart's equipment. Data was collected from 13 of 20 elementary schools serving grades first through sixth. Data was collected for two morning recesses, 10 lunch recesses and 1 community day (40-minute recess). Students were observed for their sedentary and physical activity during their recess periods. Data was entered into a database and analyzed using Stata. **Results** Of the 13 schools, a maximum of 400 students were on the playground at one time to a minimum of 22 students. Younger grades appear to be more active. The maximum recess time was 40 minutes and the minimum was 15 minutes. Seven schools released students by grade for 15–20 minutes of recess while six schools released students in clusters of two to three grades at a time. Students engaged in physical activity using the cart equipment to set up activity zones such as hula hoop, flag football, basketball, soccer, and walking paths. **Conclusion** Physical activity during recess varies by school and grade. To conduct the Active Recess program evaluation, various partnerships must occur among schools demonstrating it takes many community stakeholders to improve the health of children.

BEREAVEMENT SUPPORT FOR SYSTEMS-INVOLVED OPPORTUNITY YOUTH . Taylor Thornby. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Christina Cutshaw, PhD. Site and Preceptor: Arizona End of Life Care Partnership anchored at the United Way of Tucson and Southern Arizona – Alysha Hall, Ph.D.

Purpose: There are 23,000 Opportunity Youth (OY) (16 to 24 year-olds disengaged from school and work) in Southern Arizona. This project was the creation of an evaluation plan of a program providing bereavement support administered by Tu Nidito, a Pima County Organization providing grief and support services, and Goodwill Metro Reengagement Center which serves approximately 1,400 OY per year. OY report the death of a family member or close friend as a top reported trauma and also report a lack of services to recover from this trauma, therefore, access to bereavement support is a systemic need. Methods: A bereavement curriculum will be developed by Tu Nidito with support groups being held at Goodwill Metro Re-engagement Center. Peer groups for bereavement will focus on decreasing anger, increasing feelings of resiliency, and improving mental health. This project focused on developing the program evaluation plan for the bereavement support groups. Evaluation measures were identified by reviewing literature on the impact of death among OY and bereavement support groups. Outcomes will be assessed using a pre/post survey and focus groups. Surveys will be administered by OY Consultants from Goodwill of Southern Arizona. Results: The evaluation plan will measure the impact the bereavement support group had in decreasing feelings of anger, increasing feelings of resiliency, and improving mental health among OY. Conclusion: The evaluation plan will be used to analyze the short and intermediate term impacts of the bereavement support group and will be used to improve and enhance curriculum.

ARIZONA TITLE V MCH NEEDS ASSESSMENT – A FOCUS ON RURAL YOUTH. Abby C. Welter. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Velia Leybas Nuño, PhD, MSW. Site and Preceptor: University of Arizona Mel and Enid Zuckerman College of Public Health – John Ehiri, PhD, MPH, MSc.

Background: The Arizona (AZ) Title V Maternal and Child Health (MCH) Statewide Needs Assessment is performed by the AZ Department of Health Services (ADHS) every five years. In 2019, MEZCOPH was contracted to conduct qualitative research across the state particularly in rural areas and among underserved communities. The primary goal was to improve MCH outcomes by prioritizing and addressing needs generated from the Assessment. The internship contributed to the Assessment by gathering and analyzing data from rural communities. Methods: Data was collected using the River of Life methodology, focus groups and interviews among women, youth, and providers. Community forums were held across AZ to report back findings. The River of Life methodology was implemented at four statewide health conferences. Three focus groups were conducted with 20 high school students from rural communities. Two key informant interviews were conducted with rural parents and one with a rural-serving organization. One community forum was attended in Mojave county. MAXQDA software was used to analyze data. Results: Perspectives from youth, families, stakeholders, and providers in rural AZ were emphasized during data collection. The overarching needs were for services in mental health and substance abuse. Communities described inequitable and inadequate treatment and disparities when accessing health services. Adolescent youth discussed the need for access to health education, transportation, and contraception. Conclusion: Qualitative research methodology was used to collect data from multiple stakeholders and participants through roundtable meetings, focus groups, key informant interviews, and community forums. Key overarching health needs include mental health, substance abuse, healthcare access, transportation, and health information.

CHANGING THE WAY WE TALK ABOUT DEATH IN PIMA COUNTY. Lesleigh Zerby-Higgins. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Mary Koss, PhD. Site and Preceptor: Arizona End of Life Care Partnership anchored at the United Way of Tucson and Southern Arizona – Alysha Hall, PhD.

The Arizona End of Life Care Partnership anchored at the United Way of Tucson and Southern Arizona focuses on enhancing the quality of life by fundamentally change the way that individuals talk about death. Through this partnership, there is a network of resources to assist in conversations around end of life care planning in the community, education healthcare providers, and other community-based organizations. The purpose of this internship project is to increase awareness of the end of life ecosystem to the broader community. The two objectives of this project focused around increasing awareness of end of life care and bereavement support. One of the objectives of the project was to increase awareness about death and end-of-life care planning in the Tucson community through social media platforms, such as Facebook and LinkedIn. To increase the social media presence of the partnership, a social media template was created as well as a regular posting schedule to increase engagement between the End of Life Care Partnership and the community. Social media posts from the partnership focused on end of life care planning, perceptions of death in society and the end of life ecosystem. The second objective of the internship project was to analyze background information and develop a literature review to inform research that focuses on bereavement groups and reduction of outgroup bias in children and adolescents. This literature review centered around the positive outcomes of bereavement support for children and adolescents. The intent of this literature review is to inform a research project conducted by the End of Life Care Partnership and Tu Nidito that explores if participating in bereavement groups reduces out-group bias by increasing empathy, compassion and prosocial behaviors in children and adolescents.

MPH Health Behavior Health Promotion

Abstracts

DESIGN, PILOT-IMPLEMENTATION, AND EVALUATION OF A FAITH-BASED (CHRIST-CENTERED), AGE-APPROPRIATE PHYSICAL ACTIVITY PROGRAM FOR ADOLESCENT GIRLS (AGES 12-17 YEARS OLD) ENROLLED AT TEEN CHALLENGE OF ARIZONA SPRINGBOARD HOME FOR YOUTH IN CRISIS PROGRAM. Erica Vanessa Aguirre. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Velia Leybas Nuño, PhD, MSW. Site and Preceptor: Springboard Home for Youth in Crisis – Reverend Georgia Morrison, MA.

Background: Teen Challenge of Arizona Springboard Home for Youth in Crisis is a Christ-centered residential home designed for girls ages 12-17 years old who are dealing with life controlling issues such as substance abuse. The Springboard Director identified a need to increase regular physical activity among girls at the Home. Methods: A community assessment including a literature review, focus group, and key informant interviews was conducted to inform the design and implementation of a 12-week physical activity program. Five girls engaged in daily 60-minute cardiorespiratory and resistance training exercises. Girls completed pre- and post-surveys to evaluate change in physical, mental, emotional, spiritual and overall wellbeing. Survey responses were coded and graphed using Microsoft Excel. Results: The 5 girls reported changes in four key areas. Physical: 5 girls improved their sleep quality, 4 girls increased their physical fitness, and 4 girls improved their overall physical wellbeing. Mental: 5 girls experienced reduced depressive symptoms, 5 girls improved their body image satisfaction, and 4 girls decreased anxiety symptoms. Emotional: 5 girls reported overall less difficulties, 4 girls experienced improved self-esteem, and 4 girls improved their overall emotional wellbeing. Spiritual: 4 girls reported increased spiritual strength. Overall: It is unclear if improved changes were solely influenced by the physical activity program, other components of the Springboard Home, or both. Conclusions: The internship developed a physical activity program in response to the partnering agency need. Preliminary evaluation suggests improvement in physical, mental, emotional, and spiritual wellbeing among girls. Further monitoring and evaluation of the physical activity program are warranted for quality improvement.

VAPING AMONG ELEMENTARY STUDENTS A CONCERN? DEVELOPING A COMMUNITY ASSESSMENT AND PROGRAM PLAN FOCUSING ON VAPING AMONG ELEMENTARY STUDENTS. Tony Bishop. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Martha Moore-Monroy, MA. Site and Preceptor: Pima County Health Department – Lee Itule-Klasen, BA, CES-NASM.

Adolescent vaping is a growing concern. The 2018 Arizona Youth Survey reports that 48% of teens in Pima County have tried a vape or e-cigarette device at least once in their life. According to the Pima County School Superintendent, “vaping has made its way into middle schools, and is trickling into elementary schools.” The Pima County Health Department (PCHD) established The REAL Deal on Vaping campaign to address this alarming health concern. This project sought to support the campaign by addressing vaping among elementary students, a population not yet addressed by the campaign. The objectives of the project were to complete a community assessment and to establish a program plan based on the results of the community assessment. The community assessment consisted of a literature review on the scope of adolescent vaping and vaping prevention initiatives, researching and compiling of secondary data, key informant interviews, and a survey administered to school nurses, Resource Officers, and Wellness Coordinators. The program plan was developed based on the results of the community assessment, feedback from PCHD staff, and public health theory. The community assessment revealed that adolescent vaping is a growing concern and that vaping among elementary students may also be a growing concern but that more data is needed. The assessment also revealed that the top reason youth vape is peer pressure, that district and school policies could better address vaping, and that a potential way to decrease use is to educate parents. The program plan consisted of three parts: a survey to elementary students and parents to obtain additional data to adapt the program to meet their needs, a program that addresses parents and elementary kids with a peer-to-peer focus, and addressing of district and school policies.

STRATEGIES TO REDUCE CHRONIC HOUSING INSTABILITY IN TUCSON AND PIMA COUNTY. Lisa Floran. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Lynn B Gerald, PhD, MSPH. Site and Preceptor: City of Tucson, Ward 3 Office – Sarah Launius, PhD.

The United States chronic homelessness rate has dropped by about 16% in the past decade; however, Tucson and Pima County do not appear to reflect national decreases. The most recent Pima County Point-in-Time count registered 356 individuals as chronically homeless – 34% higher than 2018. Further, reports suggest high recidivism within local systems, with almost one-third of Pima County individuals placed in permanent housing returning to homelessness within two years. In response, the City of Tucson's Ward 3 office initiated an exploration of policies, programs, and strategies that may assist government partners to reduce rates of chronic housing instability. I worked with Ward 3 on two primary deliverables: a community assessment and a literature review. The community assessment included: 1) research on local and national data trends relating to housing instability; and 2) 17 conversations about needs, resources, and best practices with local and national experts in housing, community development, behavioral health, substance abuse, and policy. The literature review examined housing stability, health, and cost outcomes from 130 studies of permanent supportive housing, Housing First models, and case management programs for individuals experiencing homelessness. Findings from both projects support renewed emphasis on Housing First models, which prioritize permanent housing as soon as possible and without demands. Collaborating with health care systems, streamlining multi-sector projects through central leadership, and creating public communication campaigns to highlight issues and solutions also show promise. The Ward 3 office is using the deliverables as an opportunity to initiate conversations and take action on housing instability with local coalitions, city offices, and county partners.

SEXUALLY TRANSMITTED INFECTION REDUCTION IN MEN WHO HAVE SEX WITH MEN BY A SOCIAL MEDIA OUTREACH PROGRAM IN PIMA COUNTY. Morgan Frank. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Nicole Yuan, PhD. Site and Preceptor: Pima County Health Department – Emerson Kuhn.

The purpose of this project was to lower the sexually transmitted infection (STI) incidence and prevalence rates, specifically syphilis and Human Immunodeficiency Virus (HIV), among men who have sex with men (MSM) who live in Pima County. A social media outreach intervention was primarily delivered using two social media platforms, Grindr and Adam4Adam. This project had six deliverables, including development of a survey tool, a literature review, development of a novel data collection system, a social media marketing guide, a stakeholder report and implementation guide, and a multimedia presentation for Pima County Health Department's use. The deliverables mapped to eleven public health competencies, including foundational competencies, competencies for the Health Promotion and Health Behavior program, and competencies for the Epidemiology program. The project provided valuable experience in outreach programming and program assessment that will help promote the intern's future career in public health research.

ASSESSING THE POTENTIAL FOR A JUSTICE-RELATED HEALTH NEIGHBORHOOD INITIATIVE IN PIMA COUNTY. Rachel Gildersleeve. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Martha Moore-Monroy, MA. Site and Preceptor: Pima County Health Department - Lee Itule-Klassen.

Background: The internship with Pima County Health Department assessed the opportunity to initiate a health neighborhood focused on the justice-involved (JI) population in Pima County. This model recognizes the need for affordable housing paired with facilitated access to other key services in order to effectively address the social determinants of health. Methods: Cross-sectoral partnerships were fostered through meetings and round-table discussions. A survey was distributed to stakeholders to assess current organizational activities related to affordable housing and/or the JI population; capacity and willingness to collaborate; and directions for action. Results: Out of 58 contacts identified by key partners, 23 responded to the survey request. Encouragingly, most respondents' organizations currently have priorities and resources dedicated to criminal justice and/or affordable housing; many have played a leadership role in these efforts. However, a majority indicated that housing and justice-related resources were insufficient to meet the needs of their county. A majority of participants indicated that affordable housing and other needs of Pima County's JI population are not being met. Youth were identified as the priority JI demographic. Directions for action included advocacy and policy change; supportive housing; wrap-around services and increased collaboration; a focus on diversion; holistic substance abuse and mental health treatment; reduced reliance on emergency services; and employment and education services. Current assets and barriers were also identified. Discussion: Organizations appear receptive to participating in a justice-related coalition. Improved communication, a referral system, data-sharing, and funds-sharing around common goals are expected to address identified barriers and priority needs.

AMERICAN INDIAN YOUTH HEALTHY LIFESTYLE INTERVENTION. Danella Hall. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Martha Moore-Monroy, MA. Site and Preceptor: Native American Research and Training Center – Francine Gachupin, PhD, MPH.

Background: American Indian (AI) youth experience higher prevalence rates of obesity than non-Hispanic Whites. Individuals who are overweight are more likely to experience significant health consequences including high blood pressure, diabetes, heart disease, or stroke. Lack of physical activity in combination with poor eating habits contribute to the risk of becoming overweight or obese. Early intervention plays a vital role in preventing obesity. Objectives: To increase amount of daily physical activity for AI youth at risk for becoming overweight and increase knowledge on how to maintain a healthy diet. Methods: AI youth between ages 9–15 from four Arizona Tribes participated in the 7-day American Indian Youth Wellness Camp behavioral intervention. Youth participated in 4 hours of structured daily physical activities, a daily nutritional meal plan, and health education sessions. Measures of height, weight, waist circumference, body mass index (BMI), fat percent, blood pressure, and heart rate were taken pre and post camp. Anthropometric data were collected, analyzed, and interpreted in REDCap online database. Results: While the results indicate the intervention was effective due to decreases in mean intake and outtake measures of weight (–4.98lb), waist circumference (–1.66in), and BMI (–0.84), the intervention experienced interruption by loss of participants and a reduced timeframe. Conclusion: The intervention had a positive impact on AI youth participants. Data show that daily physical activity and a healthy diet can influence an individual’s risk for becoming overweight or obese. Possible recommendations for improvement include the use of more traditional and culturally relevant practices, the development of a follow-up plan to maintain healthy lifestyle practices, and utilizing tribal community resources.

INTEGRATING YOUTH PARTICIPATORY ACTION RESEARCH INTO PIMA COUNTY'S YOUTH AMBASSADOR PROGRAM TO REDUCE YOUTH VIOLENCE IN PIMA COUNTY. Kyrra Kahler. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Martha Moore-Monroy, MA. Site and Preceptor: Pima County Health Department – Brian Eller, MS.

Youth violence is a significant issue both in the United States and Pima County, Arizona. Past assessments within Pima County, including the 2018 Pima County Health Department, found a need for youth violence prevention work to be implemented in the county. As a result of these assessments, the Pima County Health Department (PCHD) created a youth ambassador program to reduce and eventually prevent youth violence in disproportionately affected communities. This program's retention, however, has been historically low. The primary objective of the internship was to help increase youth engagement and retention in the program through the integration of Youth Participatory Action Research (YPAR) to the existing youth ambassador program. YPAR was chosen by PCHD to be implemented into the program because it is considered to be a promising strategy to increase youth engagement and also prevent youth violence within communities. A literature review was created that focused on YPAR, youth engagement, and youth violence. Additionally, a program implementation guide and its associated activities were developed and created that revolve around YPAR methodology and also including opportunities for professional and personal skill development. These added opportunities correspond to results as best practices for youth retention from the literature review.

SUPPORTING ACTIVE TRANSPORTATION: BICYCLING AND WALKING IN RURAL ARIZONA . Sarah Marrujo. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Martha Moore-Monroy, MA. Site and Preceptor: Arizona Department of Transportation – Clemenc Ligocki, MA.

Rural communities can find themselves left out of the conversation when it comes to many things including active living (AL), transportation, and public health. Rural community members experience higher rates of illness, injury, and disease, which can be tied to lower levels of physical activity and access to education and resources. Literature shows that increases in walking and bicycling have strong positive impacts on physical health, mental health, environmental health and the economy, as well as social and community growth. In collaboration with the Arizona Department of Transportation (ADOT), the focus of this project was to develop a statewide workshop to improve health and active transportation (AT) in rural areas through collaboration between, public health and transportation. ADOT has designated funds in their 2020 budget for the workshop. Methods used to inform the content and design of the workshop included a literature review and key informant interviews. Interviews were conducted with diverse stakeholders in Arizona, which included civil engineers, mobility planners, chairpeople of committees, board members of local advocacy nonprofit groups, and avid bicycle and pedestrian enthusiasts. The purpose of the literature review and key informant interviews was to help guide ADOT's decision on workshop topics. Establishing a culture of safety and how rural communities can support AT without additional infrastructure were the priorities identified by the stakeholders. Additional deliverables included the creation of a pre/post survey to assess workshop attendees' knowledge, and the development of a comprehensive budget for the event. The project results will help ADOT facilitate the event and better serve their communities by creating access to AT.

ASSOCIATION OF PROTEIN CONSUMPTION AND NAFLD AMONGST MEXICAN-ORIGIN WOMEN. Jhenitza Patricia Raygoza. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: David O. Garcia, PhD. Site and Preceptor: Nosotros Comprometidos a Su Salud – Kristin E. Morrill, BS.

Introduction: Rates of NAFLD prevalence vary, with Mexican-Origin adults being the most affected amongst Hispanic heritage groups. As liver fibrosis and inflammation are prolonged and untreated, an individual is at risk of developing liver cancer and liver failure. The purpose of this MPH internship was to evaluate the association of protein consumption on the non-alcoholic fatty liver disease (NAFLD) amongst Mexican-Origin women in Southern Arizona. Methods/Activities: Data from a cross-sectional study (Liver Ultrasound & Nutrigenetic Assessment- LUNA) were used to examine associations between three protein measures (animal, vegetable, and total) and liver steatosis scores. The technique utilized to collect liver steatosis data was a FibroScan® (Liver Ultrasound), a method of transient elastography. Three 24-hour dietary recalls (two weekdays and one weekend) per participant were conducted to assess dietary protein intake. Results/Outcomes: In total, 168 women were included in the data analysis. No significant associations were found in multivariable linear regression analyses between liver steatosis scores and all protein-type consumptions: animal-based protein, vegetable-based protein, and total-protein ($P > 0.05$). Discussion: The analyses demonstrated no associations between all protein-type consumptions (animal, plant, and total) and liver steatosis among Mexican-origin women. Recommendations for future research include examining specific dietary NAFLD prevention programming for this underserved population. This includes examining relationships with additional macronutrients such as dietary fat and carbohydrates. Keywords: Non-alcoholic fatty liver disease, protein, diet, Mexican-Origin, women

IMPROVING ORGANIZATIONAL CAPACITY TO ENGAGE COMMUNITY MEMBERS . Helen Wasielewski Schaffer. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Maia Ingram, MPH. Site and Preceptor: Community Food Bank of Southern Arizona – Natalia Molina, MPH.

The Community Food Bank of Southern Arizona (CFB) is a Tucson-based nonprofit focused on decreasing food insecurity. In recent years, CFB leadership have begun to explore a return to the social justice origins of the organization. Staff of the CFB suggest that this shift will require reorienting the organization's focus: along with distributing food, the organization must work toward alleviating the conditions of poverty that cause food insecurity. One component of this change is to provide greater means of community engagement in CFB initiatives, such that clients are taking on a more active role in shaping the services and programs CFB offers. This internship focuses on providing resources that will help staff to achieve this goal. Data were collected from review of existing documents, interviews with staff, and participant observation. Participant observation occurred in settings ranging from the monthly all-staff meeting, an all-day community visioning meeting, and in the context of serving as a volunteer with the organization. These data indicate that staff generally value the concept of community participation, but that practices that engage community members are limited. To address this gap, an educational toolkit specific to the Community Food Bank was developed. The materials are intended to be used for internal staff training about strategies other organizations use to improve participation among community members. The toolkit also includes tools to assess areas of strength and weakness with regard to implementing participatory approaches within the various units of the organization.

ASSESSING KNOWLEDGE, ATTITUDES AND BELIEFS OF MEXICAN-ORIGIN MEN ON NON-ALCOHOLIC FATTY LIVER DISEASE: A QUALITATIVE ANALYSIS. Edgar A. Villavicencio. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: David O. Garcia, PhD. Site and Preceptor: Nosotros – Comprometidos A su Salud – Kristin E. Morrill, BS.

Introduction: Adults of Mexican-origin are at increased risk for developing non-alcoholic fatty liver disease (NAFLD) compared to their counterparts from other ethnic and racial backgrounds. Similarly, individuals with NAFLD are at a higher risk for developing hepatocellular carcinoma (HCC) at one point in their lifespan if treatment is not followed. The Liver Ultrasound Nutrigenetic Assessment (LUNA) is a cross sectional study to assess the prevalence of NAFLD in Mexican origin adults within the area of Tucson, Arizona, while providing basic knowledge on the implications of developing and living with this disease. The purpose of this research focuses on assessing knowledge, attitudes and beliefs about NAFLD health risk in Mexican-Origin men. Methods: Semi structured interviews were conducted with 11 Spanish speaking first generation males who were considered high risk of having NAFLD, according to transient elastography (Fibroscan) continuous attenuation parameter (CAP) scores (≥ 280 , severe steatosis). Audio recordings of these interviews were transcribed and interpreted in their respective language to facilitate data analysis using NVivo12. A thematic codebook was used, while emerging themes were also included as part of analysis. Results: Mexican-Origin men could identify NAFLD health risk along with appropriate behavior change in dietary patterns and in some instances weight loss. Cultural views, motivations for behavior change, and recruitment recommendations for a NAFLD-specific intervention were themes identified. In addition, the men mentioned a brief screening resulted in follow-up with their providers for health care. Conclusion: This qualitative study suggests the development of a NAFLD-specific intervention approach for Mexican-Origin men may be feasible and should consider gender and social context.

PIMA COUNTY HEALTH DEPARTMENT'S ANTI-VAPING "REAL DEAL" CAMPAIGN: THE ROLE OF SCHOOL RESOURCE OFFICERS. Alexandrina Wallace. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Martha Moore-Monroy, MA. Site and Preceptor: Pima County Health Department - Lee Itule-Klasen, BA, CES-NASM.

The Pima County Health Department launched a social media campaign called "The REAL DEAL on Vaping" in March 2019 to combat youth vaping through an education campaign focused on youth and adults working with youth about the harm and misconceptions related to vaping. Working closely with youth in an everyday setting, school resource officers (SRO) are valuable role models and mentors. The goal of this project was to analyze different aspects of school resource officer programs across Pima County and determine an effective course of action to involve SROs in PCHD's anti-vaping efforts. A literature review on SRO job barriers and assets was conducted to discover any initial concerns and impressions of SROs' work on school campuses. An existing survey tool was modified to collect data to better understand SROs' work in youth public health concerns and trainings related to working on a school campus. The survey was distributed to SROs following in-person interviews with the SRO or their sergeant. Finally, interviews determined current work in vaping prevention as well as barriers and support needed to improve prevention efforts. SRO program operations varied across Pima County depending on funding sources with some municipalities completing additional trainings or grant requirements. Since vaping is not a criminal offense, school administration handles vaping situations. SROs educate youth on vaping when possible; however, information is limited to law-based training. Partnership between PCHD and Pima County SRO programs can expand prevention efforts by bringing expertise from the legal and health aspects of vaping through inclusion of SROs in current vaping taskforce groups and providing direct contact for public health information, guidance, and training.

STUDENT TELEHEALTH COACHING FIDELITY IN A LIFESTYLE INTERVENTION FOR OVARIAN CANCER SURVIVORS . Samantha J. Werts. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Cynthia Thomson, PhD, RD. Site and Preceptor: University of Arizona Collaboratory for Metabolic Disease Prevention and Treatment – Meghan Skiba, MS, RDN.

INTRODUCTION: Telehealth coaching delivered by college students is a cost-effective method to reach diverse populations and deliver lifestyle interventions. Telehealth utilizes phone calls and text-messaging to promote improved health behaviors. Treatment fidelity of the telehealth coaching intervention employed in the Lifestyle Intervention for oVarian cancer Enhanced Survival (LIVES) study is evaluated here to establish the level of fidelity achieved using a student-model of health coaching for cancer survivors. **METHODS:** LIVES (n=1205) is a randomized, controlled trial wherein 601 ovarian cancer survivors were assigned to an intervention emphasizing a high fiber, low fat, increased fruit and vegetable eating pattern alongside increased physical activity. To promote behavior change, participants engaged in structured telephone coaching with trained nutrition science students over a 24-month period. Coaching fidelity was evaluated using a checklist developed a-priori for LIVES. A total of 259 randomly selected calls from 173 individual study participants were evaluated by two independent reviewers; a score of ≥ 11 out of 14 points was considered fidelity adherent. **RESULTS:** 87% of calls scored were considered fidelity adherent. The average fidelity score was 12.1 ± 1.4 points. Of calls scored, intervention specific goal setting was noted in 88%, self-efficacy in 46%, and assessment of barriers and facilitators to change in 97%. In relation to behavior change, 79% of participants were meeting ≥ 3 of 5 study goals by the 6-month time point. **DISCUSSION:** High fidelity is demonstrated in the delivery of the LIVES intervention utilizing student provided telehealth coaching. This model is a valid approach to remotely deliver lifestyle interventions for cancer survivors and could be considered for future telehealth interventions.

THE UAHS RESEARCH ADMINISTRATION INTERNSHIP: JOB DEMANDS AND EMPLOYEE WELLNESS. April Yingst. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Patricia Haynes, PhD. Site and Preceptor: University of Arizona Health Sciences Research Administration – Angela Valencia, MPH.

The University of Arizona Health Sciences (UAHS) Research Administration Pre-Award team supports UAHS faculty in preparation and submission of grants and other research-related activities. Research administrators serve a critical function by facilitating the submission of public health research grants. As a result, they face significant challenge stressors associated with high workloads and frequent grant deadlines. The goal of this internship was to (1) gain an understanding of research administrator work demands, including sponsor requirements for extramural funding, and (2) create training material for agency staff on reducing occupational stress. To achieve goal (1), the agency provided training in sponsor-required compliance review of all grant application components, including a grant budget application. The deliverable for goal (1) is a budget template to be used by both agency staff and UAHS faculty. The template was pre-existing; however, the agency requested several changes to be made in order to improve its functionality. To achieve goal (2), a PowerPoint training on occupational stress and stress management was prepared. A literature review was conducted to identify existing research on occupational stress and evidence-based interventions for stress management. A training was created that discussed job stress, stress management and resiliency, and barriers to stress management. Teaching research administrators how to manage job-related stress may diminish long-term negative health effects from job stress and also promote continued, optimal work performance.

MPH Health Services Administration

Abstracts

PROCESS IMPROVEMENT FOR REFERRAL CAPTURE. Clayton Colwell. University of Arizona, Phoenix, AZ, U.S.A.. MPH Internship Committee Chair: Gail Barker, MBA, PhD. Site and Preceptor: Banner Health – Joe West, MPH.

Introduction: An effective transition from primary care providers (PCP) to specialty physicians is vital in ensuring patient health needs are met. Heightened internal capture rates on patient referrals can be used to drive operating revenue and assist in organizational growth. Methods: Using the 2018 internal PCP referral data for all Banner Health PCP throughout their network, a baseline was established and compared to the capture rate for referrals in 2019. These results were then analyzed and assessed to determine key performance indicators (KPI) in referral capture. The leading KPI were the amount of time it took to contact patients for follow up; 74% of captured referrals were scheduled within 72 hours. Additionally, specialist distance from the home of record of the patient had a large impact; 82% of patients traveled less than 35 minutes for their referral appointment. Results: In 2018 Banner Health captured only 19.1% of their internal referrals from Banner PCP to specialty physicians. This resulted in over 300,000 referrals never receiving the next level of care within Banner Health. Results from 2019 indicate a 3% increase in capture rate for internal referrals. This 3% represents an additional 10,124 patients seen within the Banner network. Conclusion/ Recommendations: A 3% increase in capture rate represented a \$8.2 million increase in revenue for the 2019 year compared to 2018. Slight changes in referral protocol (calling a patient within 72 hours to schedule their follow up appointment) resulted in substantial financial impact. Designing and constructing an internal physician catalog in which physician availability, referral acceptance rate and distance from PCP could potentially result in a 5–7% increase in referral capture and improved follow up. This represents \$9–13 million in additional revenue.

PREPARATION OF TRAINING MATERIALS AND STUDENT LED PEER SUPPORT GROUP FACILITATOR TRAINING FOR EL RIO'S WEIGHT MANAGEMENT AFTERCARE PROGRAM. Emma Conners. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Gail Barker, MBA, PhD. Site and Preceptor: El Rio Health – Diane Haeger, MBA.

Introduction: Aftercare plays a crucial role in ensuring the maintenance and progression of health improvement goals for participants in weight management programs. This project's objective was to effectively train facilitators in developing the skill set and confidence necessary to run aftercare peer support groups for El Rio's Weight Management Program. Methods: After a comprehensive literature review was conducted, an evidence-based training manual that integrated examples and opportunities for reflection was created. Next, a PowerPoint presentation and a 12-month schedule of peer support group topics were developed. These products were presented at the in-person training session held on March 7th, 2020 where facilitators were taught skills through interactive training activities. Results: The training was hosted at an El Rio clinic on March 7th, 2020 and three facilitators were trained. The objective was to teach inclusive practices that individuals will use during group facilitation. The intent was to foster cultural awareness and help participants focus on a health journey beyond "scale-measured victories". The first peer support group session will be held in Spring or early Summer of 2020 in partnership with program staff to provide facilitators with an opportunity to practice and receive feedback. A future directions summary was also created. This product presented feedback collected via an exit survey at the end of the training and included recommendations for how to continue to develop and improve the program. Conclusion: The ultimate goal of this internship was to develop peer support groups to be integrated as one part of a larger, multifaceted aftercare program that would incorporate continued education and encouragement for individuals as they pursue their health improvement journey.

EVALUATION OF HISTORICAL ORGANIZATIONAL INFORMATION AT THE ASHLINE. Janice Jacob. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Gail Barker, MBA, PhD. Site and Preceptor: Arizona Smokers' Helpline – Uma Nair, PhD, MS, MA.

Introduction: The Arizona Smokers' Helpline (ASHLine) is dedicated to providing cessation support to tobacco users through coaching and pharmacotherapy. While their services are currently free of charge, they wish to switch to a Limited Eligibility Model that offers free service exclusively to their Medicare and Medicaid clients. Under this model, clients with private insurance will be charged a fee to access their cessation support services, allowing the ASHLine to use their funding to serve a wider range of the low-income, high risk population. In this study, a cost and price analysis was conducted to establish a pricing structure for billing purposes. Methods: The services related to cessation support were identified as Self Help Materials (SHM), Phone Sessions, Text Messages, Pharmacotherapy, and Reporting. Historical financial data were collected to determine personnel costs, operational costs, and Nicotine Replacement Therapy (NRT) costs. The employees' annualized salaries were broken down into an hourly rate to effectively allocate personnel costs to each of the services offered. These expenses were recorded on Microsoft Excel to establish billing rates and a pricing structure. Results: The packages that the ASHLine wishes to offer their clients are SHM, SHM + 6 Phone Sessions, SHM + Text Messages, SHM + 6 Phone Sessions + Gum NRT, SHM + 6 Phone Sessions + Lozenge NRT, SHM + 6 Phone Sessions + Patch NRT, and Reporting. The costs of these packages are \$47, \$339, \$213, \$372, \$375, \$368, and \$74 respectively. Conclusion: The pricing structure established in this study can be presented to businesses and insurance companies looking to offer their employees and clients these services. Applying a margin to these prices will further benefit the ASHLine to achieve profitability.

THE DIABETIC PROJECT AT WESLEY COMMUNITY HEALTH CENTER. Ananya James. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Douglas Campos-Outcalt, MD, MPA. Site and Preceptor: Wesley Community Health Center – Sonya Wilkins, BS.

Affordable healthcare is still a concern for the average citizen in the U.S., a country that spends the most for healthcare in the world. For low-income and uninsured individuals in Arizona, gaining control over chronic conditions like diabetes is often difficult when health is not financially prioritized compared to food, utilities and other necessities. The Wesley Community Health Center, a federally qualified health center located in Phoenix and Golden Gate Campus, focuses on providing access to care for this population by utilizing a sliding-fee scale. In November of 2018, the center launched a program called Sliding Fee Diabetic Project to help current and new diabetic patients gain control over their condition by reducing visit and lab fees and offering nutrition classes in exchange for consistent follow-ups visits. To measure the change, I compared the diabetic patients' visitation patterns of January-June of 2018 to 2019. There were no gender, location or age restrictions but all of the selected patients had A1c level >9 . The results showed that most of Wesley's diabetic patients did not utilize the discounted fee. Compared to 2018, the mean age decreased while there was an increase in A1c levels in 2019. However, patients who took advantage of the new policy and had a lab report on file both times, decreased their A1c level by approximately 4 percent (14.6% to 10.2%). In addition, during my internship, I evaluated the budget to actual for YTD May 2019 and developed a tool that will anticipate possible changes in the budget under the Arizona Alliance of Community Health Centers (AHCCC) Rules.

TRAINING NEEDS ASSESSMENT IMPLEMENTATION TO THE PIMA COUNTY HEALTH DEPARTMENT WORKFORCE – CHFS TASK ANALYSIS. Ryan Matthew Maldonado. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Gail Barker, MBA, PhD. Site and Preceptor: Pima County Health Department – Khalil Sheiban.

Introduction: The goal of this internship was to assist the Pima County Health Department (PCHD) in conducting a training needs assessment to identify job requirements needed for the PCHD's workforce. I learned how the organization runs by assisting the Workforce Development Team with planning and implementing a department-wide task analysis project. Methods: The assessment was accomplished by analyzing the functional job descriptions of the division staff members being assessed. First, job responsibilities were validated by the respective directors. Next, interviews and observations of employees were conducted to gather information about the tasks performed. Once tasks were validated, the workforce staff developed a task inventory based on the information gathered from the observations and interviews. Focus groups of subject matter experts were then assembled to review the list of tasks to determine data accuracy. The inventory of tasks was then compiled and converted into a survey that was designed to assess task importance, frequency, and difficulty. Once the survey was completed and verified by each division director, survey results were analyzed. Results: Survey results identified areas that needed improvement and revealed where there were gaps in job knowledge. Interviews and observations demonstrated a need for cross cultural training as well as more "real life" experiential training. All summary findings were presented to PCHD's Director, CFO and division directors. Conclusion: Task analysis is an important tool to assure staff competency and helps identify the knowledge, skills, and abilities that need to be emphasized in training. The task analysis enabled our team to develop evidence-based and meaningful training solutions that better aligned with the vision, mission, and strategic plan of the PCHD.

THE UTILITY OF REGISTRIES FOR HIGH RISK UA MOBILE HEALTH PROGRAM PATIENTS. Mokenge Ndiva Mongoh. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Gail Barker, MBA, PhD. Site and Preceptor: UA Mobile Health Program – Patrick Rivers, MPH.

Introduction: According to US census data, 10.9% of the Pima County population is uninsured. The UA Mobile Health Program (MHP) provides primary health care services for uninsured persons living in Southern Arizona. Many of these individuals are forced to use emergency rooms for their health care needs. The MHP serves both children and adults, with a wide range of diagnoses, including diabetes. To better serve this diabetic population and facilitate monitoring efforts by medical staff, a patient registry was developed. Methods: An excel spreadsheet was used to develop the registry. Based on the directive of the MHP, specific diabetes indicator data was compiled for the registry. The data included: A1C level, microalbumin level, ACE/ARB use, statin use, lipid panel results, daily aspirin use, insulin use, blood sugar, presence of wounds, and date of last visit. These data are indicative of medication compliance and overall management of diabetes. The registry included only diabetes patients who visited one or more of the MHP locations in Tucson during 2019. Results: 35 patients were identified by the MHP medical staff for follow up and were listed in the registry. 23 of the 35 patients were missing one or more of the identified diabetes indicators. The medical staff reached out to all 23 patients to schedule exams to address the missing indicators and the registry was then updated. Conclusions: Closer monitoring of MHP high-risk patients, including those with diabetes, means fewer visits to the ER for these largely uninsured patients. Based on the initial success of the diabetes registry, a similar registry could be developed for other high-risk groups served by the MHP. The next step for this project is to perform an analysis of all MHP patients to identify other groups that could benefit from a registry.

IMPLEMENTATION OF A CLINICAL PATHWAY FOR ACUTE HEAVY MENSTRUAL BLEEDING IN ADOLESCENT PATIENTS. Melissa Parks. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Gail Barker, MBA, PhD. Site and Preceptor: Phoenix Children's Hospital – Noor Zwayne, MD.

Introduction: Heavy menstrual bleeding affects approximately 40% of adolescents and can be clinically challenging to manage due to variability in provider care plans. Clinical pathways are document-based tools created for healthcare providers that afford evidence-based clinical practice guides. Institutional utilization of this tool can optimize the care of patients who present with heavy menstrual bleeding. Methods: A retrospective chart review from September 2018 to March 2019 of patients who presented to Phoenix Children's Hospital for management of acute heavy menstrual bleeding was conducted. Baseline data including age, admission requirement, number of units of packed red blood cells transfused, average length of stay, use of hormonal therapy, readmission and outpatient follow-up rate was collected. A team of stakeholders including representatives from the Gynecology and Hematology Departments was assembled. A literature review including existing pathways from other institutions was performed and used to develop a clinical pathway standardizing management. Results: Of the 27 patients who presented with acute heavy menstrual bleeding, 22.2% (6/27) required admission. The average length of stay was 1.05 days (range 1–8 days) and the average number of units of packed red blood cells transfused was 1.0 (range 0–2 units). Overall, 48.1% (13/27) attended a follow up appointment with Gynecology, 44.4% (12/27) were managed with hormonal therapy, and 2 required readmissions. The clinical pathway was successfully developed, implemented, and approved per Phoenix Children's guidelines on December 18, 2019. Conclusions: Decreases in variation of care are anticipated through implementation of this healthcare tool. Outcome, processing, and balancing measures will be studied and applied to optimize the pathway's efficacy.

DEVELOPMENT OF A FAMILY PLANNING CURRICULUM AND TRAINING GUIDE IN BENEFIT OF NEWLY RESETTLED REFUGEE CLIENTS. Kiana Perez. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Cecilia Rosales, MD, MS. Site and Preceptor: International Rescue Committee – Kara Kempf, MA.

Introduction: The International Rescue Committee (IRC) is a non-profit organization that focuses on refugee, asylee, and immigrant resettlement for individuals who seek refuge from violence, war, extreme poverty, or seek treatment for medical conditions (IRC, 2020). In efforts to recruit newly resettled or established clients, IRC Phoenix is establishing a Family Planning Workshop for women and partners who are interested in family planning methods and or spacing between pregnancies. Family Planning has proven to decrease maternal and infant mortality, create economic stability, and increase the possibility of pursuing an education and or paid employment. Purpose: The purpose of this curriculum guide is to establish an interactive workshop for IRC clients encompassing family planning topics and imparted by IRC educators. By educating clients about their family planning and sexual health options, clients can understand contraceptive methods, practice communication skills, and establish family or personal goals that contribute to the well-being of mother, child, and partner. Additionally, the purpose of the training guide is to coach IRC caseworkers on how to discuss family planning options with clients in a culturally sensitive manner and aligned with their cultural values. Moreover, caseworkers can refer clients to the Family Planning Workshop. Methods: The curriculum guide developed using evidenced-based information from the scholarly and grey literature. The guide outlines the curriculum material and interactive activities created to assist in conveying the information in a culturally sensitive manner to clients. A training presentation for IRC caseworkers was designed, teaching verbal techniques on how to initiate discussions about family planning methods with clients, alongside role-playing activities for practice.

NAXOLONE AVAILABILITY AND PRIVACY IN ARIZONA. Amber Poteet. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Gail Barker, MBA, PhD. Site and Preceptor: Arizona State Senate – Heather Carter, MEd, EdD.

Introduction: For the past few years, the opioid epidemic has prompted new policy initiatives to be proposed throughout the country. State legislatures, including Arizona, have passed laws allowing the public to have access to Naloxone. In Arizona, Naloxone is distributed through a standing order from the Director of the Arizona Department of Health Services. However, pharmacists can ask for identification for those purchasing Naloxone with or without insurance. This project was initiated to determine how many pharmacists ask for identification when Naloxone is purchased. Methods: An online, anonymous survey was created utilizing Qualtrics to determine how many pharmacists require patients to provide some form of identification when purchasing Naloxone. The survey consisted of eight fill-in-the-blank and multiple-choice questions. It was distributed by email to all Arizona pharmacists who had registered emails with The Arizona Board of Pharmacy. The pharmacists were given one month to complete the survey. Results: The survey was distributed to approximately 7,500 pharmacists in Arizona, resulting in 1,859 responses. Among the respondents, 79% stated they do not require identification when Naloxone is purchased with insurance. For patients without insurance, 80% of the pharmacists stated that they do not require identification to purchase Naloxone. Conclusion: In Arizona most pharmacists do not require identification when Naloxone is purchased. It is recommended that future legislation be passed that prevents pharmacists from asking for identification. This will help protect people's identity if they wish to remain anonymous when purchasing Naloxone. It could also increase the utilization of this life-saving drug.

PATIENT REPORTED DISTRESS: AN UPDATED MEASURE FOR CANCER PATIENTS AT UNIVERSITY OF ARIZONA CANCER CENTER. Samantha D Slack. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Gail Barker, MBA, PhD. Site and Preceptor: University of Arizona Cancer Center – Elizabeth High, MSN, RN.

Background: Distress is common among cancer patients due to the physical symptoms associated with cancer, cancer treatment and the psychosocial impact of a cancer diagnosis. High levels of distress have been associated with poor quality of life, reduced treatment compliance and adherence to treatment-related recommendations and medication. This can result in reduced survival. Distress is not clearly defined, so this can lead to over or under reporting by patients and missed opportunities for clinical intervention. The University of Arizona routinely screens patients for distress using the National Comprehensive Cancer Network Distress Thermometer (DT). The DT allows patients to circle a number on a scale of 0 (no distress) to 10 (extreme distress) in order to best describe their distress level. The answers are then scored and used to determine if the patient will be referred to social services.

Methods: This project will update the existing DT, using a survey tool that utilizes 4 Emojis to express distress. Emojis have become a universal language, which is commonly understood and spans across many languages and demographic groups. The updated tool will be disseminated to select oncologists and the Oncology Nurse Navigators as they have initial contact new patients and are responsible for referring patients for psychosocial services. Qualitative data will be collected through a survey to assess the instrument's usefulness and effectiveness. The survey results will be used to update the tool and assist in the creation of a protocol for its implementation. Results: Due to the COVID-19 interruption, results are pending. Conclusion: Developing a more accurate stress thermometer and updating the protocol for determining patient stress levels is an important step in treating the psychosocial aspects of patients with cancer.

MD/MPH Clinical Leadership

Abstracts

RETROSPECTIVE REVIEW OF THE FOUR-YEAR TREND OF IMMUNIZATION COVERAGE AND PERSONAL BELIEF EXEMPTION AMONG MARICOPA COUNTY KINDERGARTEN AND SIXTH GRADE STUDENTS. Jocelyn Di Nolfi. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Maricopa County Department of Public Health – Dr. Rebecca Sunenshine, MD.

Introduction: In recent years, there has been an increase in personal belief exemption and a corresponding decrease in vaccination coverage for school-required vaccines among children in Maricopa County. Trends in personal belief exemption (PBE) as well as documented immunity to measles, mumps, rubella (MMR) was reviewed retrospectively for four consecutive academic years among Maricopa County kindergarten and sixth grade students. Methods: Data of immunization coverage was obtained online via the publicly available Arizona Reporting Schools Coverage Report for the represented years. Data from 1,280 schools was available for analysis from 2015–2016, 1,298 schools from 2016–2017, 1,281 schools from 2017–2018, and 1,280 schools from 2018–2019. This data was stratified based on school type (public, charter, private) and free and reduced lunch subsidy was used as a surrogate of socioeconomic status for each participating school. Results: Overall, for every increase in academic year, there was an increase in PBE to at least one required immunization and an increase in PBE to all required immunizations by 0.43% and 0.5%, respectively. For each increase in academic year, there was a decrease in documented MMR immunity by 0.26%. Higher rates of exemption were seen in charter and private schools when compared to public schools. Additionally, parents of children attending schools utilizing less free and reduced lunch subsidy have a higher tendency to exempt their children from school-required vaccinations. Conclusion: These results demonstrate a growing need to limit personal belief exemptions as the lack of vaccination coverage continues to threaten the health of Maricopa County children.

NIL PER OS DURATION AND POST-EGD OUTCOMES. Ms. Bibinaz Eghtedari. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Banner University Medical Center – Sumit Agarwal, MD, MBA.

Objective: It is necessary to further elucidate the relationship between pre-procedural NPO duration and associated outcomes in morbidity and mortality, particularly in the geriatric population, who are vulnerable and have been generally excluded in studies regarding the matter. We aim to investigate if increased preoperative NPO duration in individuals 65 and older is associated with poorer post-procedural outcomes, specifically post-Esophagogastroduodenoscopy (EGD) outcomes as measured by number of falls, hypoglycemic events, length of stay, and Banner Mobility Assessment Tool (BMAT) score (assessing patient functional status). Design: This is a single-center retrospective descriptive analysis utilizing data collected per review of the electronic medical record. 1,428 patients aged 65 and older who underwent EGD at Banner University Medical Center in Phoenix, Arizona from 2017–2018. Results: There was no significant difference in post-EGD fall rate or hypoglycemic event rate based on NPO duration in all patients and in all patients excluding diabetics. In all patients, ANOVA comparison shows no significant difference in BMAT score change ($p=0.587$) within NPO duration. In the comparison excluding diabetic patients, ANOVA comparison also shows no significant difference in BMAT score change ($p=0.815$) within different NPO durations. For post-EGD length of stay duration, in all patients as well as excluding diabetics, ANOVA comparison within NPO duration groups shows that at least one pair of the comparisons is statistically significant ($p<0.05$). Conclusion: The duration of fasting before EGD procedure was not associated with any difference in post-procedural fall rate, rate of hypoglycemic events, and BMAT score. There was, however, a demonstrated significant increase in post-procedural length of stay.

REAL WORLD EXPERIENCE OF POLY ADP-RIBOSE POLYMERASE INHIBITOR USE IN A COMMUNITY ONCOLOGY PRACTICE. Agnes N. Ewongwo. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Arizona Oncology – Dana Chase, MD and Bradley Monk, MD.

Objective: This study aims to describe the real-world experience, including the clinical and financial burden, associated with poly ADP-Ribose polymerase inhibitors (PARPi) in a large community oncology practice. Methods: Retrospective chart review identified patients prescribed olaparib, niraparib or rucaparib for maintenance therapy or treatment of recurrent ovarian, primary peritoneal or fallopian tube cancer across twelve gynecologic oncologists between December 2016 and November 2018. Demographic, financial and clinical data were extracted. One PARP cycle was defined as a single 28-day period. For patients treated with more than one PARPi, each course was described separately. Results: A total of 47 patients and 506 PARP cycles were identified (122 olaparib, 24%; 89 rucaparib, 18%; 294 niraparib, 58%). Incidence of grade >3 adverse events were similar to previously reported. Toxicity resulted in dose interruption, reduction and discontinuation in 69%, 63% and 29% respectively. Dose interruptions were most frequent for niraparib but resulted in fewer discontinuations (p-value 0.01). Mean duration of use was 7.46 cycles (olaparib 10.52, rucaparib 4.68, niraparib 7.34). Average cost of PARPi therapy was \$8,018 per cycle. A total of 711 phone calls were documented (call rate 1.4 calls/cycle) with the highest call volume required for care coordination, lab results and toxicity management. Conclusions: Although the toxicity profile was similar to randomized clinical trials, this real-world experience demonstrated more dose modifications and discontinuations for toxicity management than previously reported. Furthermore, the clinical and financial burden of PARP inhibitors may be significant and future studies should assess the impact on patient outcomes.

ASSESSING THE SURVEILLANCE AND TREATMENT OF PERINATAL HEPATITIS C TRANSMISSION AMONG DIFFERENT SPECIALTIES IN ARIZONA. Shanan Immel. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Arizona Department of Health Services – Elizabeth Kim, MSPH.

Background: Hepatitis C is the most common chronic bloodborne infection in the United States. There have been increasing infections in younger people and women of childbearing age. Among the many diseases that can pass vertically during pregnancy, hepatitis C is able to establish perinatal infections in approximately 5% of HCV-positive mothers. There is increasing evidence that many of these infections go undiagnosed and are lost to follow-up, putting children at risk of complications of hepatitis C at a young age. Methods: The goal of this project was to assess the knowledge, attitudes, and practices (KAP) of different specialties in Arizona. A KAP survey was created and sent out to multiple medical provider listservs. Data from the survey was analyzed by knowledge, attitudes, practices, and differentiated by specialty when there was enough data. An educational pamphlet was written for providers about perinatal hepatitis C to be sent out by ADHS. Results: 32/83 respondents selected the correct answer for the vertical transmission rate (5%). 72% of respondents consider the vertical transmission of HCV infection to be a problem while 73.2% support universal prenatal screening for HCV as opposed to risk-based screening. 31% said they rarely or never ask about these risk factors for HCV. For OB/GYN providers 45% always counsel HCV-positive women about postpartum follow up for their child, 32% said they rarely or never do. 33 wanted education about this issue, 1 said no. Conclusion: Perinatal hepatitis C is an understudied public health problem. It is medically dangerous for patients, especially when the infection goes undiagnosed. In light of the opioid epidemic, rising infections in young people, and many gaps in care, consideration should be given to universal screening of HCV in prenatal and well-woman care.

INTEGRATING CULINARY MEDICINE TO A LOCAL PHOENIX FEDERALLY QUALIFIED HEALTH CENTER. Sarah Javaherifar. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Wesley Golden Gate – Farshad Fani Marvasti, MD, MPH.

Objective: To design and implement a “Diabetes Friendly Recipe Guide” evaluated by and tailored for patients at Wesley Health Clinic, a federally qualified health center in Phoenix. To incorporate recipe guide into current and future on-site Culinary Medicine cooking classes. Methods: Twelve patients with Type II Diabetes attending a Culinary Medicine instructive class ages 18 and older were given a “Diabetes-Friendly Recipe Guide” that included 6 recipes. Recipes were available in Spanish and English. Recipients evaluated the booklet with a 7-question survey (Likert Scale ranging from 1 to 5) assessing readability, ease of recipes, and access to ingredients. Results: All twelve attendees of the instructive class completed the survey. The majority of patients (83%) strongly agreed that the recipe book is easy to read and that the recipes sound diabetic-friendly. The majority of patients (92%) strongly agreed that the recipes include meals that they would enjoy at home and that would be easy to make. Furthermore, 83% of patients strongly agreed that the ingredients were not expensive. The majority of patients (75%) strongly agreed that they have many of the ingredients at home, while 92% strongly agreed they had the necessary equipment. Conclusion: The majority of patients strongly agreed that our diabetic-friendly recipe booklet is easy to read and has recipes that are easy to make, affordable, and accessible. Limitations include small sample size.

ADDRESSING GAPS IN SEXUAL AND REPRODUCTIVE HEALTH EDUCATION FOR ADOLESCENT GIRLS IN UGANDA. Megan Kelly. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Hope of Children and Women – Kampala, Uganda – Laura Mercer, MD.

Objective: Identifying appropriate approaches to sexual and reproductive health (SRH) education for adolescent girls in Uganda is needed to improve knowledge and to address current gaps. The aim of this project was to determine effective educational strategies in providing Ugandan adolescent girls with SRH education. Methods: A comprehensive literature review was conducted with a focus on existing SRH health education programs, outcomes due to unmet education needs, and cultural practices in Eastern African countries. A curriculum guide with three lessons was developed with the goal of providing health educators with a SRH education tool to be used in primary and secondary schools. Results: Anecdotally, adolescent girls between the ages of 8–14 in Kampala, Uganda lack basic understanding and knowledge of reproductive and sexual health topics. In 2018, the Ugandan Ministry of Education and Sports introduced the National Sexuality Education Framework, which aims to guide educators in promoting SRH education. According to Unicef’s Situation Analysis of Children in Uganda, there is a need for SRH education, along with family planning services, that adolescent girls have not had previously. Girls in Uganda are especially vulnerable to existing inequities and are disproportionately affected by health disparities, including high rates of maternal and newborn mortality, gender-based violence, and HIV/AIDs. Additionally, almost half of women 20–49 marry before the age of 18, 15% of girls less than 15 years are married, and only 36% of sexually active girls have ever used contraceptives. Conclusions: Ugandan adolescent girls, as a vulnerable population, experience greater adverse health outcomes and health disparities related to SRH outcomes, necessitating development of comprehensive SRH education tools and resources.

IMPROVING DETECTION OF CHILD ABUSE AND NEGLECT AT PHOENIX CHILDREN'S HOSPITAL. Shivani Misra. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Phoenix Children's Hospital – Lois Sayrs, PhD.

This internship was conducted at Phoenix Children's Hospital (PCH) in conjunction with the Lois Sayrs, Senior Clinical Research Scientist of the Trauma and Surgery Research Department and other members of the Child Protection Team (CPT). The overall goal of this internship was to increase detection of child abuse and neglect at PCH. The first deliverable was hosting a breakout session presentation at the annual Child Abuse Prevention Conference about neglect. This presentation was a multi-disciplinary, hour long culmination of the work we have accomplished over the past few years. The four main components of the presentation included a description of the problem of child abuse and neglect, identification and exploration of language as a main contributing element for the increasingly missed cases of neglect, the research that has been conducted in our lab, and future directions/interventions created as a method of reducing the number of child abuse and neglect victims. The second deliverable involved improving the method in which data is collected by the CPT. This included multiple meetings with various experts and recreating the database in which data is collected and also implementing new strategies to increase the communication between the clinical and research arms of the CPT. The first deliverable was a lot more straightforward, while the second proved vastly more difficult due to the necessity of connecting multiple groups of people. Overall, I feel as though I have contributed a significant amount to the organization, and I hope future child abuse and neglect research can become more robust due to these new implementations.

IDENTIFYING MATERNAL CONGENITAL SYPHILIS RISK FACTORS IN MARICOPA COUNTY. Patrick O'Connor. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Maricopa County Department of Public Health – Rebecca Sunenshine, MD.

The United States has seen a rise in the incidence of syphilis over the last decade that has resulted in a >200% increase in the rate of congenital syphilis (CS) between 2013–2017. The burden of syphilis has been severe in Arizona and Maricopa County. Syphilis is a known teratogenic infection that can cause stillbirth and lifelong morbidity. We identified risk factors to better target future interventions for pregnant women with syphilis. We compared residents of Maricopa County who had syphilis during their pregnancy from Jan 1 through June 30 2019. Positive cases were women who had syphilis during pregnancy and had a resulting live or still birth that met case definitions for CS. Negative cases were women who had syphilis during pregnancy whose live or still birth did not meet the case definition. We abstracted data from medical records, and the state surveillance system to identify risk factors and used the 2018 Arizona Vital Statistics to calculate CS rates per 100,000 live births (CSR). We found that of the 65 pregnant women with syphilis, 38 (58%) were congenital syphilis cases, and 37 (97%) of those were live births. Median age was 28 years (range: 20–47 years); 21 (55%; CSR 197) were Hispanic, 6 (16%; CSR 324) were black, 6 (16%; CSR 51) were white, 3 (8%; CSR 435) were American Indian/Alaska Native and 2 (5%) were other. Compared with negative cases, positive cases were more likely to report unstable housing during pregnancy (odds ratio [OR] 3.6; 95% CI 1.1–11.4). Compared with historical cases, 2019 cases were more likely to report recent incarceration (OR 7.4; 95% CI 2.5–22.0) and drug use (OR 3.9; 95% CI 1.8–8.2). Populations who may benefit most from targeted, early interventions would be minorities, the recently incarcerated, drug users, and those with unstable housing.

PREVALENCE OF SEXUALLY TRANSMITTED INFECTIONS (STI'S) AMONG INCOMING REFUGEES IN MARICOPA COUNTY, ARIZONA. Fawsia Osman. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Maricopa County Public Health Department – Renuka Khurana, MD.

Refugees settling in America arrive mostly from conflict areas in Sub Saharan Africa, Middle East, Central and South Asia where incidence of STI is high. 84,989 refugees resettled in the United States in 2016 with Arizona being the 6th largest recipient. A retrospective study was performed to evaluate 11,471 medical records of refugees between 2013–2017. The overall prevalence rates among those tested were 1.12% (90 of 8,055) for Chlamydia, 0.19% (15 of 8,055) for Gonorrhea, 0.73% (80 of 11,018) for HIV, and 55.5% (71 of 138) for Syphilis (+TPPA+RPR). The prevalence rates of Chlamydia ($p < 0.001$), HIV ($p < 0.001$) and Syphilis ($p < 0.001$) were statistically significant when compared to the Maricopa County rates, while the rate of Gonorrhea ($p < 0.84$) did not show statistical difference. There was no statistically significant difference noted in all the STIs tested among males and females. Between the various age groups, Chlamydia was statistically higher among the age group of 15–25 ($p < 0.04$) while HIV was statistically significant among the age group of 36–45 ($p < 0.04$). Among the different regions, the syphilis seroprevalence rate was highest among those from the Caribbean (73.7%) $p < 0.02$ compared with persons from the other three regions (South/Southeast Asia, Sub-Saharan Africa, Middle East and North Africa). Chlamydia had the highest prevalence among those from the Middle East/ North Africa (2.0%) $p < 0.04$. There was no significant difference among the prevalence of Chlamydia, Gonorrhea, HIV and Syphilis and HIV over the years from 2013–2017. Overall, the higher prevalence rates of Chlamydia, HIV and Syphilis when compared to the population they immigrate into indicating the importance of routine screening of incoming refugees and utility of CDC refugee post-arrival screening and evaluation recommendations.

SOUTH PHOENIX HEALTHY START. Sarah Patel, BA. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: South Phoenix Healthy Start – Tatjana Loncar, CCCE, IMH-E®I, CBC.

South Phoenix Healthy Start is a federally funded organization that is intimately involved with improving early childhood health, reducing infant mortality, and improving women’s health implemented through the Maricopa County Department of Public Health. The intricacies of maternal and more broadly women’s health in Maricopa County are intimately tied to multifactorial issues such as race, socioeconomic status, and education. Instructing and reinforcing the roles women have to be advocates in their own healthcare are goals of the institution and internship project. Research about community education and knowledge regarding perinatal obstetric visits, and yearly wellness exams for reproductive-aged women were conducted. Working with South Phoenix Healthy Start, an evidence-informed guided curriculum for annual women’s wellness exams, prenatal pregnancy obstetric visits, and postpartum obstetric visits were created. Curriculum were compiled for expectant mothers and women in their reproductive years to reference before engaging with healthcare professionals and will be presented in video format to participants. Videos will stream on South Phoenix Healthy Start Facebook Page via live stream in March 2020.

DEVELOPMENT & TESTING OF CULTURAL HUMILITY CURRICULUM FOR MEDICAL STUDENTS. Dylan M. Sabb. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: University of Arizona College of Medicine – Phoenix – Matthew McEchron, PhD.

Introduction: Updating curriculum is a practical means to improving the cultural humility training of medical students and address health inequities. This project targeted the University of Arizona College of Medicine – Phoenix students to understand current gaps, generate new content, and trial their implementation. Methods: We surveyed senior medical students, then developed a learning tool for independent study. Two clinic cases, using an actor patient, were created and tested. Eleven students tested these two cases: a transgender woman seeking a preventative screening exam (5), and a Muslim patient newly diagnosed with diabetes and Ramadan approaching (6). Audio–video recordings were analyzed for content and patient rapport. Pre– and post–surveys were given to case participants. Results: The pilot survey identified seven populations for curriculum growth: Native American/Alaskan Native, Transgender/Gender Nonconforming, Muslim, Hindu, Buddhist, Mormon/LDS, and Refugee/Asylum–Seeker. A training module was made with one slide per population and randomized to case participants. Six students addressed medical needs of patients (screening by organs and diabetes counseling while fasting). Nine students established strong rapport, and all used open–ended questions. All students expressed desire for diversification of doctoring skills training and recommended incorporation of cases and the module into medical curriculum. Discussion: Clinical skills in cultural humility are iterative, and safe spaces to practice navigating barriers while meeting medical needs offer a solution. Continuing to survey students for content gaps and supplementing medical student curriculum would help longitudinal efforts to reach all physicians, not just those who opt into extracurricular training.

EFFECTS OF RADIOLOGY RESIDENCY CALL SUPERVISION ON EARLY CAREER MAJOR MISS RATES AND PRODUCTIVITY. Alexia Tatem. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Virtual Radiologic (vRad) – Christine Lamoureux, MD.

Background: The purpose of this study was to compare the major miss rates and productivity of early-career radiologists as related to residency call structure. Traditional radiology residency programs consist of supervised training during the day, with residents taking call at night and on weekends without direct attending supervision. Newer training models have in-house supervision of residents during all components of their training, including while on-call. Training programs are currently split on the method utilized, and each style has advantages and disadvantages. Unsupervised on-call shifts can foster a greater sense of self-reliance and accountability early in the radiologist's training, while supervised shifts provide immediate feedback on errors. Methods: Data were collected regarding radiologists who work for Virtual Radiologic (vRad), including former training location, date of graduation, and type of model the program employed during the radiologist's training period. Major miss rate and productivity data were obtained from quality assurance (QA) data routinely collected by vRad, with major discrepancies vetted through a QA committee. Results: We hypothesized that the traditional call model as compared to the supervised model may result in fewer major miss rates and higher productivity in early-career radiologists. Final results pending at the time of this printing. Discussion: Residency training is an important public health topic, as medical errors have been reported to be the third leading cause of death in the United States. Resident autonomy is relevant in all specialties of medical training, and there is a delicate balance between preparing trainees to be independent physicians while maintaining patient safety.

EVALUATION OF OPT-OUT HCV TESTING AND LINKAGE TO CARE AT MARICOPA COUNTY CORRECTIONAL HEALTH SERVICES. Jaimei Zhang. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: M. Moe Bell, MD, MPH. Site and Preceptor: Maricopa County Correctional Health Services – Grant Phillips, MD.

Hepatitis C (HCV) is a viral infection that has an acute phase with potential to develop a chronic phase that if untreated often results in liver disease. Risk factors for transmission of HCV include IV drug use, using contaminated equipment for tattooing, unsafe sexual practices, and using blood products that have not undergone screening. As such, incarcerated individuals are a high-risk group for HCV infections amongst other infectious diseases. Maricopa County Correctional facilities has an estimated 100,000 individuals incarcerated per year. Maricopa County Correctional Health Services (CHS) received a grant to begin an opt-out screening program for hepatitis C in 2017. One goal of this internship project was to evaluate the results of this opt-out program, and between July 2017 – July 2019, a total of 18,904 inmates were screened. Of those screened, a total of 3,106 individuals screened positive for the HCV antibody and RNA test, indicating active infection. Given the variable nature of length of stay in the jail system, another goal was to improve linkage to care for HCV following release of incarceration. We created a proposal for an HCV case manager position to identify high-risk individuals with other comorbid conditions to provide a “warm-handoff” in transitioning to care outside of the correctional system. Further, we aimed to increase CHS provider awareness of HCV treatment and public health impacts through a provider education course and training guide. In addition to these two deliverables, another outcome of this internship was developing systems-level thinking for preventing disease in high-risk populations.

MPH One Health

Abstracts

CLIMATE CHANGE AND HEALTH DATA VISUALIZATION USING THE ARIZONA ENVIRONMENTAL PUBLIC HEALTH TRACKING EXPLORER. Sarah Battaglia. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Heidi Brown, PhD, MPH. Site and Preceptor: Arizona Department of Health Services – Matthew Roach, MPH.

The Centers for Disease Control and Prevention (CDC) Environmental Public Health Tracking (EPHT) Program provides consistent, accessible data and information on environmental exposures, health effects, and population characteristics across public health jurisdictions. As an EPHT grantee, the Arizona Department of Health Services (ADHS) has developed a data visualization tool, the Arizona EPHT Explorer, which provides maps, tables, and charts of health conditions and environmental hazards at county and sub-county levels. As a Climate Change Intern at ADHS, my role supported functions of the CDC EPHT Climate Change Content Workgroup. In collaboration with vector borne and zoonotic disease epidemiologists and GIS developers, I facilitated the expansion of the Arizona EPHT Explorer to include an indicator topic for West Nile virus (WNV). As the first vector borne disease to be featured on the Explorer, WNV human case counts and incidence rates provide sub-county information that can direct future data collection and decision-making. A literature review was conducted to define this indicator and propose additional measures, while promotional materials were produced to encourage community engagement with tribal partners and the general public. WNV trends in Arizona will be influenced by environmental and meteorological shifts, animal and host factors, as well as climate change. We recommended that Arizona EPHT Explorer expands its data set to include additional measures and indicators that will impact infectious disease tracking, while expanding community partnerships.

ANALYSIS OF PIMA ANIMAL CARE CENTER INTAKE DATA IN COMPARISON TO RESOURCE DISTRIBUTION DIRECTING TO DATA COLLECTION RECOMMENDATIONS. Kylie Boyd. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Kristen Pogreba-Brown, PhD, MPH. Site and Preceptor: Pima Animal Care Center – Kristen Hassen-Auerbach, MA.

Introduction: Pima Animal Care Center (PACC) is at the forefront of animal shelters in the United States. They collect data about the animals, from intake to adoption, and everything in between. This data can provide a plethora of information for animal shelters and the community. Methods: The data collected from PACC was exported via excel spreadsheets then imported to STATA. The data collected about veterinary clinics, pet stores, grocery stores, animal shelters, and pet boarding/kennels was found via Google Maps then accumulated through an excel spreadsheet. Using STATA, coding was conducted then the data analysis was completed. This information was used to give recommendations to PACC, in the form of a field manual, in order to collect more thorough and reliable data. Results: Through the data analysis, it was found that the majority of the unfavorable intake types came from a minority of zip codes. These zip codes coincided with the zip codes that had less animal related resources overall. However, there are 27,366 missing zip codes (38%) for the 72,058 total observations, along with a number of incorrect and/or missing observations in other categories for the PACC data set. Recommendations were based on the need for a complete, dependable data set in the form of a field manual for employees and volunteers. Discussion: With less animal related resources in a particular zip code, there was an increase in unfavorable intake types. This relationship is significant; however, the correlation does not necessarily mean that there is a direct causation. With an increase in reliable data, PACC will understand more about the animals. These types of analyses could be used around the country for animal shelters as a whole to have a greater understanding of the dynamic between animals, humans, and resources.

WATER FEATURES AND URBAN HEAT ISLAND MITIGATION FOR PIMA COUNTY. Mark Alexander Grantham Kissinger. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Heidi Brown, PhD, MPH. Site and Preceptor: Pima County Health Department – Spencer Graves, BS.

Identifying assets and resources at a community's disposal is an essential part of planning for climate change and extreme heat. Mitigating the Urban Heat Island effect and its impacts on human health is a top concern for Pima County. Water features like fountains, splash pads, and nebulizers are effective urban mitigation strategies for improving thermal comfort. The degree of improvement on thermal comfort is not the same for each kind of water feature, however, and a literature review of 4 articles in PubMed and 10 articles in Web of Science indicates some strategies might be more suitable for a setting like Pima County. Proposition 407, passed in 2018, will result in the development of 25 splash pads at parks throughout the county. Pima County currently has 4 splash pads. Using Microsoft Excel, we mapped the existing and future splash pads and cooling centers in Pima County to identify which specific areas of the county, particularly ZIP codes with higher poverty levels, are or are not being served by our urban heat mitigation efforts. In addition to the maps, I developed a set of survey questions about guests' experiences with splash pads and heat-related illness, intended to be distributed in English or Spanish (as appropriate) to park visitors. This internship is intended to provide the Pima County Health Department and the Arizona Department of Health Services with consolidated information about the effects of splash pads on human and with maps of cooling centers and splash pads that can be imported into software and guide the Pima County Building Resilience Against Climate Effects (BRACE) program towards best practices and identifying vulnerable areas.

INTAKE DATA EVALUATION FOR THE PIMA ANIMAL CARE CENTER AND PUBLIC HEALTH INTEGRATION TO ANIMAL SHELTERS. Ayeisha M. Rosa Hernandez. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Katherine Ellingson, PhD. Site and Preceptor: Pima Animal Care Center – Kristen Hassen–Auerbach, MA.

Introduction: The Pima Animal Care Center (PACC) serves as a link between pets and owners, providing the necessary support to maintain public health while offering companion animals a safe and healthy life. Understanding the factors that lead to high animal intake can provide the basis to enhance current approaches and pave the way for more efficient operations at PACC. The purpose of this project is to identify trends in PACC's intake data, explore their public health implications, and evaluate its potential utility. Methods: De-identified intake data for 72,058 dogs from 2014–2018 was obtained from PACC, of which a total of 39,471 were analyzed. Descriptive measures were assessed to determine areas of high burden in Pima county, and trends in data. A literature search was conducted to support recommendations and public health integration in future research at PACC. Results: Zip codes 85706, 85713, and 85705 have the highest intake burden in comparison to other analyzed areas, accounting for 10.6% (4,186), 9.9% (3,917), and 9.5% (3,739) of all intakes, respectively. All three regions are among the top zip codes in population size. Overall, the top two intake types were “stray” (30.7%; 12,096), and “owner surrender” (28.3%; 11,181). While underlying reasons for “stray” animal intake are hard to know, surrendered pets had a broad spectrum, many being potentially solvable. Several barriers were met upon data cleaning attempts. Therefore, a need for enhanced data collection at intake was identified. Conclusions: Due to incomplete data, specific reasons for animal intake in zip codes with the highest burden could not be identified. Future projects can help PACC develop appropriate data collection systems to allow for more feasible analyses of this information.

MPH Public Health Policy and Management

Abstracts

A COMMUNITY FOOD BANK–FQHCS COLLABORATION TO INCREASE FARMER REVENUE AND PRODUCE CONSUMPTION IN SOUTHERN ARIZONA. Kathryn Faull. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Douglas Taren, PhD. Site and Preceptor: Community Foodbank of Southern Arizona – Rhonda Gonzalez, MSPH.

Introduction: Food insecurity is a world-wide issue that can influence poor health outcomes. To address this issue by increasing access to fresh produce, the Community Food Bank of Southern Arizona partnered with two federally qualified community health centers (FQHCs) to create a Prescription Fruits and Vegetables (FVRx) program. Two different FVRx programs (community supported agriculture (CSA) and farmers' market) were piloted with a goal of increasing the market for and consumption of fresh produce. Methods: The CSA pilot at a rural FQHC provided 29 low-income participants weekly access to fresh produce and cooking recipes over the course of 12 weeks. A FVRx Farmers' Market in an urban FQHC provided 21 diabetic individuals vouchers to a farmers' market and monthly cooking classes over 12-weeks. Pre and post-surveys were given to participants and farmers. Additional open-ended discussions with farmers were used to obtain information about the program. This report focuses on the CSA program. Results: Post survey results from the CSA program indicated that 91% of the participants had favorable feedback about their participation. Participants increased the amount and variety of fruits and vegetables consumed which was related to the types of produce distributed, especially orange-colored vegetables. The efficacy to prepare and consume the produce also increased. CSA farmers reported the program was beneficial and increased their community involvement. Discussion: Results indicated that the FVRx program increased produce consumption, enjoyment of produce, and efficacy in cooking. This program did meet our goals of increasing access, preparation and consumption of fruits and vegetables. As a pilot study, the sample was small, and we learned the time limitations working with vendors and FQHCs.

ADHS SUNWISE EVALUATION. Dylan Miller. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Robin Harris, PhD, MPH. Site and Preceptor: Arizona Department of Health Services– SunWise Program – Ginny De La Cruz– BA, MS.

Background: Arizona has four of the nation’s top ten sunniest cities and one of the highest ultraviolet indices in the country. Because UVR is the major risk factor for skin cancer, it is important for Arizona residents, and specifically its children, to know how to protect themselves from the sun’s harmful rays. The goal of this internship was to conduct an evaluation of the AZ SunWise initiative, a joint Arizona Department of Health Services and Environmental Protection Agency Program. AZ SunWise was designed to educate school-aged children on how to protect their skin from the sun through classroom and school presentations. Methods: In 2019 to present, the AZ SunWise curriculum was presented at five schools. Before and after surveys of key knowledge items were obtained from 333 students (205 kindergarten through 2nd graders and 127 high school students) who attended a SunWise presentation. Teachers were asked to provide qualitative feedback on the presentation components. The results were input to Qualtrics and exported to Stata for analysis. Results: Key findings included statistically significant increases in knowledge for both k–2nd and high school students after the presentation, particularly for Sun Protection Factors (40% vs. 63.8% in K–2nd grade and 35.4% vs. 84.6% in high school) and use of clothing as a protective measure (79.0% vs. 86.6% in K–2nd grade and 29.9% vs. 46.2% in high school). Teachers also noted satisfaction with the length and age–appropriateness of the presentation. Discussion: This evaluation identified areas in which the SunWise presentations improved short–term knowledge for participating students while areas also were identified for improvement. Information from this evaluation will be used by the AZ SunWise program to edit existing presentation materials and develop new materials.

MEZCOPH'S PUBLIC HEALTH WORKFORCE ASSESSMENT. Brittney Trang. University of Arizona, Tucson, AZ, U.S.A. MPH Internship Committee Chair: Stephanie Russo Carroll, DrPH, MPH. Site and Preceptor: MEZCOPH – Emily Waldron, MPH.

Abstract Introduction: Beginning in Fall 2018, the Mel and Enid Zuckerman College of Public Health (MEZCOPH) conducted a self-study process for reaccreditation by the Council on Education for Public Health (CEPH). One criterion for accreditation requires schools to assess the school graduates' ability to perform competencies in an employment setting with community stakeholders. **Methods:** A Qualtrics survey was distributed to the employers of MEZCOPH graduates. Feedback on graduates', in the past one to two years, public health competence was gathered qualitatively and quantitatively. Quantitative questions were measured by both frequencies and percentages to assess alumnus competency and preparedness for the public health workforce. Content analysis of qualitative questions was used to identify emerging competency level themes. **Results:** The employer survey included 31 employers who supervised undergraduate and graduate students. Eighteen of these supervisors worked at universities, 7 worked at local and state health offices, 5 worked at private non-profit agencies and 1 worked as a type of health provider. Most of these supervisors hired an undergraduate student (15) or MPH student (13), and only 2 hired DrPH students. According to the self-study results, most MEZCOPH graduates were ranked as "extremely prepared" and "very competent", with all surveyed employers indicating their confidence that their employee is competent to fulfill their job. **Discussion:** The quantitative and qualitative results of the self-study are being used to develop a short course for graduate students and other new public health employees to meet the growing public health workforce needs and to improve public health professionalism.

MPH Public Health Practice

Abstracts

SUMMARIZING DATA COLLECTED SURROUNDING TEEN DATING VIOLENCE. Allison El-Tawil. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Janet Foote, PhD. Site and Preceptor: BLOOM365 – Donna Bartos, BA.

Background BLOOM365 is an organization that is focused on diminishing the root causes of abuse to accomplish their mission of preventing teen dating abuse before it starts. As part of BLOOM365's mission, BLOOM365 provides a seven-dose curriculum to high schools throughout Maricopa County. During the curriculum participants are provided with an Elephant in the Room (EITR) card which they can use to anonymously ask questions, provide feedback, or reflect on what they are learning. Methods Each EITR card that was collected during the fall 2019 semester was added to an excel document and provided with an identification marker. These EITR cards were then coded for overall theme, the dose from which the card was collected, the expression on the card, the type of response on the card, and the school from which the card was collected. The EITR information was then summarized for dose, overall theme, expression type, question type if question was asked, and the school. Results Of the 1,314 cards collected, 30.67% included feedback, 20.78% were questions, and 15.37% were reflections which included disclosures of abuse. Of the reflections, 17.33% had an overall theme of mental health, 15.35% had an overall theme of teen dating violence, and 14.85% had a theme of 'Other'. Of the questions asked, 20.51% were questions about BLOOM365, 17.95% were regarding general advice, and 16.48% were regarding personal help for the individual asking the question. Conclusion The results from this project will help BLOOM365 examine common patterns in what is disclosed on the EITR cards. BLOOM365 will then be able to determine where to focus their efforts in improving their programs and the type of content delivered in their seven-dose curriculum.

ARIZONA CENTER FOR TOBACCO CESSATION BUSINESS PLAN AND STRATEGIC PLAN DEVELOPMENT. Brandon Howard. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Gail Barker, MBA, PhD. Site and Preceptor: Arizona Center for Tobacco Cessation – Mark Martz, PhD, MPA.

Introduction: The Arizona Center for Tobacco Cessation (ACTC), formerly the ASHLine, is a newly established center within the Mel and Enid Zuckerman College of Public Health at the University of Arizona. The ACTC mission is to develop and implement comprehensive tobacco cessation strategies to reduce the adverse health and economic impact of tobacco use in Arizona. The ACTC is primarily funded by the Arizona State Tax on tobacco products, yet currently reaches only 1.6% of tobacco users in Arizona. Budgeting constraints require the need for ACTC to seek out new sources of funding. In order to identify other funding streams, the ACTC must clearly outline why they are needed, and how they can be secured, in order to prepare for the solicitation of alternative funding. As part of this process an improved strategic plan and business plan is required. The goal is to have 30% of all funding from alternative sources by the end of 2025. Methods: A review of existing literature was performed to identify current quitline trends, practices, threats, and opportunities. Existing organizational material, including previous strategic plans, business plans, scope of work, and interagency service agreements were reviewed and discussed to identify organizational strengths, weaknesses, and opportunities. This analysis culminated in the synthesis of a new business plan and strategic plan that incorporates updated information on the newly established ACTC. Results: The business plan and strategic plan have been completed and are awaiting final information and approval. Conclusions/Recommendations: These documents will be critical in diversifying the ACTC's funding through public-private partnerships, grants, and donations to ensure sustainability and help them acquire additional resources to improve existing services.

ARIZONA LEGISLATIVE INTERNSHIP: RESEARCH STAFF FOR THE HEALTH AND HUMAN SERVICES COMMITTEE. Megan Larsen. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Janet Foote, PhD. Site and Preceptor: Arizona House of Representatives – Ingrid Garvey, BS.

Background: As an intern at the Arizona House of Representatives, I aided research staff with various tasks. My objectives were to learn about the state legislative process and public health policy and to improve my written and oral communication skills. **Methods:** To achieve these objectives, I observed the stakeholder process, researched and summarized proposed legislation for the House Committee on Health and Human Services, briefed legislators on proposed legislation, and presented on legislation in committee and caucus meetings. Providing written and spoken briefs involved researching current law, breaking down legislation into clear provisions, and reducing the main idea of a bill into a comprehensive overview sentence. **Results:** One piece of legislation that I worked on was the “Mental Health Omnibus” bill, for which I researched federal law on mental health parity, the impact of mental illness in Arizona, access to and insurance coverage for mental health services, and the role of AHCCCS in linking patients to mental health services in Arizona. I described the provisions of the bill, distilled the provisions into a few key points, and presented these points to the Health and Human Services Committee, Appropriations Committee, and Republican Caucus. As the bill moved through the House, I attended stakeholder meetings, summarized proposed amendments, and incorporated amendment summaries into the original summary. **Conclusions:** This internship gave me valuable exposure to the policy side of public health. By observing the stakeholder and legislative processes, I gained insight into the roles that elected officials, licensed healthcare professionals, and laypeople all have in enacting policies that influence public health.

MEDICAL CHART REVIEW: THE EFFECT OF AMBULATION ON POST-OPERATIVE PAIN SCORES AMONG PECTUS EXCAVATUM REPAIR THROUGH NUSS PROCEDURE. JulieAnna Olague. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Janet Foote, PhD. Site and Preceptor: Phoenix Children's Hospital – Erica Weidler Baimbridge, MEd.

Introduction: The Nuss procedure is a minimally invasive technique for patients with pectus excavatum (PE), a chest wall deformity. Post-operative pain among Nuss procedure patients is expected to be intensive and involves various modes of pain management. The opioid epidemic and associated research has led to the utilization of alternative pain management approaches among post-operative patients, including early ambulation. Through a medical chart review retrospective pilot study, we hoped to assess if early post-operative ambulation as an adjunct to current pain management has an effect on pain scores, hospital length-of-stay and decreased opioid use. Database creation and initial data collection were the focus of this internship. Methods: A data collection form was initially drafted and modified. A database was then created using the UA Research Electronic Data Capture (REDCap). After database modification, the study was moved to production and data collection began. Inclusion criteria included patients ages 8 to 30 years who had PE and underwent a Nuss procedure at Phoenix Children's Hospital. Results: Data collection focused on opioid and non-opioid dosage and frequency, ambulation activity, and reported pain scores. Other demographic and clinical variables were collected as needed for the purpose of this study. Conclusions: Understanding the complexity of conversions of all pertinent opioids to IV morphine was vital for database completion and proper data collection. Consistent medical charting was optimal for complete data. Next steps in testing the posed hypothesis and achieving the goals for this study includes data analysis and further discussion.

READ IT AND EAT. Danielle Soto. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Janet Foote, PhD. Site and Preceptor: Native Health – Susan Levy, BS.

Introduction Native Health is a non-profit organization whose mission is to provide accessible, holistic patient centered care, to empower their community to achieve the highest quality health and well-being. In keeping with this mission Native Health began, Read It and Eat, a grant funded program focused on improving early reading literacy in children, teaching healthy recipes, and increasing access to fresh produce in interest of disadvantaged community families. Each month, two classes were held, in which a librarian interactively read with the children, healthy recipes were taught to families, educational nutrition content was distributed, and a bag of fresh produce was given to each family Methods Pre and post surveys were conducted in classes held in Phoenix and Mesa in order to examine disparities and evaluate the effectiveness of the program. Survey question types ranged from box checking, rating scale, and free response. Responses were compiled and then summarized using graphs and percentages. Results Responses demonstrate that the degree of food disparity within this community was not significantly high, though the majority of children's diet was deficient in vegetables. Sixty-one percent of parents felt 'great' about their child's diet, but 100 percent of participants responded that they wanted to make healthier choices after the class. Only 46.2 percent of families read with their children on a daily basis, but 85.7 percent expressed a greater concern for early literacy post program. Conclusion In conclusion, the program demonstrated effectiveness in encouraging early literacy for children, promoting healthier diets, and reducing food disparities. As a whole, participants were satisfied with the program and were better educated on the importance of early literacy and healthy recipes.

HOW POLITICS AFFECTS THE POLICY MAKING PROCESS. Maria Valdez. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Cecilia Rosales, MD, MS. Site and Preceptor: Arizona State Capitol – Heather Carter, MEd, EdD.

Background: Health policy is created in a political context, including the influence of political party, bill sponsors, and party ideologies. We analyzed these components for a series of 2018 opioid bills to determine how politics affects the policymaking process in state legislatures. Methods: 24 opioid bills from the 2018 legislative session in Colorado and Arizona were examined. Bills were matched according to topical similarity. Bills were compared based on political party with the majority party in Colorado varying between the Senate (Republican) and the House (Democrat). Arizona had a strong Republican majority for both chambers. Results: In Arizona 11 opioid bills were introduced. 2 of the 11 were sponsored by the minority party and 9 by the majority party. All minority-party bills sponsored were held in committee (0% success), while 8 of the 9 majority-party bills were signed into law (89% success). In Colorado, 13 opioid bills were introduced. 2 were sponsored by the minority party, 3 by the majority party and 8 had bipartisan support. All single party sponsored bills were held in committee (0% success). 6 of the 8 bills with bipartisan support were signed into law (75% success). Conclusion: In Colorado, bipartisan support was needed in order to pass opioid-related bills, mirroring the political makeup of the legislature. In Arizona, opioid-related bills required majority party sponsorship, similarly mirroring the political constitution of the legislature. These cases suggest that political party has a strong impact on the passage of health policy in state legislatures.

COHORT FOLLOW-UP STUDY OF TWO MODELS OF CHRONIC VASCULAR DISEASE CARE IN LOW-INCOME PERUVIAN COMMUNITIES. Emily Candace Witt. University of Arizona, Phoenix, AZ, U.S.A. MPH Internship Committee Chair: Janet Foote, PhD. Site and Preceptor: Siempre Salud USA and Asociación Siempre Salud (Peru) – John E. Deaver, MD, MS.

Background: Asociación Siempre Salud is a grassroots Peruvian non-profit organization that organizes low-income communities to improve participation in and the quality of preventive and primary health care. Siempre Salud focused on the most common causes of adult and child mortality and severe morbidity. Between 2008 and 2011, Siempre Salud conducted a census in the neighborhoods of El Salvador, Keiko Sofia, and Micaela Bastidas in the Chinchá district of Ica, Peru. Residents were screened for type 2 diabetes and hypertension. Those persons who agreed to participate in the study were then treated using a home-based model of care provided by community health workers (CHWs) or a clinic-based model of care provided by physicians. Methods: A literature review was conducted examining the role and effectiveness of CHWs in improving vascular disease prevention and care in low-resource regions. This review focused on evaluating past studies and systematic reviews involving CHWs. A clinical database with de-identified data was utilized for data analysis of home versus clinic care in both diabetes and hypertensive patients. Data analysis was completed to determine factors associated with poor control of blood glucose or blood pressure levels. Results: The literature review demonstrated the variable roles CHWs serve within their communities. The relative effectiveness of home-based and clinic-based care was compared using multiple logistic models of blood glucose or blood pressure control. Conclusion: In low-income communities, CHWs providing home-based care may serve as an effective alternative source of care. CHW interventions and programs can significantly impact patient behaviors and the health status of patients.

The MPH Internship Experience

From the inception of the Master of Public Health Program in 1993, the internship experience has been one of the most impactful and practical part of the program's curriculum. In the fall of 1999, MPH faculty determined that students needed a formal setting for making their oral presentations. A committee comprised of faculty, students, and student services professionals was formed to develop an appropriate presentation venue. In November 1999, the MPH Program debuted its first MPH Internship Conference. The format of the conference, held each fall and spring, is similar to that of a professional or scientific meeting.

Since its establishment, the MPH Internship Conference has grown in stature and significance to the Mel and Enid Zuckerman College of Public Health (MEZCOPH). The College uses this event as a public health networking tool by inviting public health practitioners, partners, and alumni throughout the state. The key to its success lies in the student participation. The MPH Internship Conference is a student-facilitated production. Students coordinate the multitude of details involved in its planning, promotion, and culmination; student presentations are its foundation.

Through contributions they have made and the benefits they have gained, the Internship Conference reflects the indelible handprint of MEZCOPH students on public health projects and agencies throughout the world.



THE UNIVERSITY OF ARIZONA

**Mel & Enid Zuckerman
College of Public Health**