

These student projects were conducted to fulfill the research requirement of Biom594 (Student Research Project) for second year medical students. Biom594 was held between July 3 and August 25, 2006.

Assessing the Severity of Malnutrition in Filipino Children as a Baseline for a Long-Term Study in Batangas, Philippines

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Adequate nutrition is a vital component of a child's development. Without proper nutrition, a child becomes developmentally delayed relative to his or her peers. This can negatively affect a child's ability to succeed academically, eventually impacting his or her standard of living as an adult. In the Philippines, it is accepted that malnutrition is widespread and prevalent among children. Despite this obvious crisis, only a few studies have investigated the effects of malnutrition on cognitive functions in Filipino children. To further explore this issue, the objective of this research project is to obtain the malnutrition status of children in the barangay of Batangas. The heights and weights of 80 Filipino children ages two through six were recorded. Using the Waterlow Classification, the percentage of wasting and stunting will be calculated, indicating the severity of malnutrition among these children. This data will serve as a baseline to explore the correlation of milk supplementation with the IQ of kindergarten, first, and second grade students in this destitute community. Therefore, this long-term study will require the administration of an IQ test before and after six months of daily milk supplementation. It is our hypothesis that their cognitive ability and IQ will improve with nutrition received through milk supplementation. Such findings may result in the implementation of government supported programs, which will provide milk or other cost-effective means of nutrition to children throughout the Philippines.

Clinical Trials and Medical Education: Integrating Research and Teaching

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Despite the essential contributions of clinical trials to science and medicine, adult participation in clinical trials remains exceedingly low, with only 2-4% of all adult patients with cancer in the U.S. participating in clinical trials. These low participation rates present an ongoing challenge to the development and validation of new treatments for cancer. This article focuses on a particular project which aims to increase the confidence levels of first and second year medical students in discussing clinical trials with their patients, which is seen as one of the major barriers to enrollment in trials. Medical students were given surveys upon enrollment and throughout their training to assess their understanding and attitudes toward clinical research. Additionally, focus groups were used to further understand the attitudes and responses in the surveys. This

paper will describe the need for integration of clinical trials into the medical school curriculum, the process through which the clinical trials education program was implemented in one medical school in Hawaii, evaluation structures and results, and plans for future integration and development. We propose that emphasis placed on abuses in research must be tempered with education about the tremendous advances in medicine and patient care that can be attributed to clinical trials: In addition, further integration of clinical trials information into the curriculum through the use of standardized patients and other similar innovative measures will continue to enhance students' awareness of clinical trials.

Hepatitis B and C Screening Among Homeless in Hawaii

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Homeless in Hawaii are at an increased risk for contracting hepatitis B and C. Increased risk factors for hepatitis C, such as drug use, tattoos, ear/body piercing, and high risk sexual contact are common among this population. Also, a large proportion of Hawaii's homeless comes from Micronesia, where the prevalence of hepatitis B is one of the highest in the world. To determine the incidence of hepatitis B and C among a population of homeless individuals, a health fair was held at a Honolulu area homeless shelter. Incidence of hepatitis B and C infection and assessment of risk factors were determined via a survey and blood test for hepatitis B antigen and hepatitis C antibodies. 54 homeless adults were surveyed and tested, 22 of these were born in the United States and 28 were born in Micronesia. 3 of the 22 (14%) US-born participants tested positive for hepatitis C, compared to a nation average of 1.8%. The primary risk factor among this group was jail time (100%), followed by illegal drug injection (66%), tattoos (66%), ear/body piercing (66%), snorted drugs (33%), blood transfusion (33%), and sex partner with hepatitis (33%). 1 of the 28 (4%) Micronesians tested positive for hepatitis B, compared to a national average of 12-14%, the only risk factor was ear/body piercing. The health fair approach was an effective means for screening homeless for hepatitis B and C. Additional screening is necessary to determine the incidence of disease and risk factors in other homeless populations around Hawaii.

Antibacterial properties of *Marinda citrifolia* leaf extracts

Lisa Chargualaf

Faculty: Shannon Hirose-Wong, PhD, Abby Collier, PhD (Native Hawaiian Center of Excellence & Department of Tropical Medicine, Medical Microbiology & Pharmacology)

Among the major ethnic groups in Hawaii, Native Hawaiians suffer from some of the worst health statistics, which some researchers attributed to societal factors, creating distrust and apprehension of western medicine by these native peoples. Accordingly, alternative means of healthcare must be explored to facilitate a means to provide healthcare to Native Hawaiians that incorporates traditional preferences into medical practice such as to gradually ameliorate their poor health conditions and to restore the health of Native Hawaiians. A starting point would be look towards traditional native

Hawaiian health practices such as la 'au lapa 'au for common herbal-derived remedies to incorporate into practice. As such, the objective of this research project is to look at the viability of the leaves from the indigenous *Marinda citrifolia* plant for use as an antibacterial agent for cutaneous wounds, given its use by Native Hawaiian herbalists as a salve to combat infections. Precise material and methods still pending review and discussion with Dr. Collier. If extracts show antibacterial activity, further research into the exact compound responsible for such activity may be worthwhile.

Broken Heart Syndrome – A case report on the Hawaii debut of Transient Left Ventricular Apical Ballooning Syndrome (takotsubo cardiomyopathy)

Stephen Chun

Faculty: Victor Kwok, MD, Derek Pang, MD, Thomas Lau, MD (St Francis Medical Center)

Transient left ventricular apical ballooning syndrome (takotsubo cardiomyopathy) is a rare clinical entity that is characterized by transient left ventricular apical ballooning and left ventricular apical dyskinesia in the absence of angiographic evidence of coronary vessel disease in post-menopausal women. Reported here is a Native Hawaiian female patient who was admitted to the hospital for severe bradycardia who developed transient left ventricular apical ballooning after pacemaker implantation. The case reported here is the first time that transient left ventricular apical ballooning syndrome has been documented in the Pacific Islands.

The Impact of Hula on the Physical and Emotional Well Being of Native Hawaiian Women with Breast Cancer: A Case Study

Shauna Conry

Faculty: Shannon Hirose-Wong, PhD (Native Hawaiian Center of Excellence)

Breast Cancer is a leading cause of death for Native Hawaiian Women. Once treated, Native Hawaiians have the lowest 5-year survival rates of any other ethnic group in the state. In response to these alarming statistics, researchers continue to explore issues of healthcare access and utilization, cultural influences, and the existence of cultural conflict experienced with western health care practices. These factors may be compounded by feelings of isolation and fear during or after conventional therapy. Dance therapy is one acceptable complementary treatment used for women with breast cancer. Dance programs have demonstrated enhancement of quality of life by improving physical range of motion, physical health, and emotional well being as well as overall improvement in body image, increased energy, and enhanced interpersonal relationships. Hula, traditional Native Hawaiian dance, places great emphasis on physical and spiritual expression, with a strong connection to the natural environment. In theory, by connecting a dancer to her heritage, her environment, her community, and her spirit, hula may present a viable form of therapy for Native Hawaiian women recovering from breast cancer. This case study examines the impact of hula on the physical and emotional well being of a Native Hawaiian woman diagnosed with breast cancer. An interview was conducted with a 30 year old, self-identified Native Hawaiian woman having the diagnosis of ductal carcinoma in situ. A series of open-ended questions for the interview focused on the

experience of living with cancer, as well as her hula practice. Special attention was focused on hula's impact on her illness. The participant confirmed the hypothesis that Hula has enhanced her physical healing by improving her energy levels and increasing her arm range of motion. She also reported that hula has enhanced her emotional well-being and has been an important part of her emotional healing. Overall she emphasized that Hula has been an important part of her physical and emotional healing process. These interview responses merit further investigation into the use of hula as a form of therapy for native Hawaiian women with breast cancer. Future quantitative studies may be combined with this and other qualitative data, to encourage health care professionals to advise Native Hawaiian women to begin or continue the practice of hula for its enhancement of quality of life, and its ability to improve emotional and physical healing.

Case Review of Myxedema Coma

Michael Cordeiro

Faculty: Melanie Kelly, MD (Department of Medicine, JABSOM)

Myxedema coma is a relatively rare complication of hypothyroidism. It is a form of decompensated hypothyroidism that involves multiple organs of the body. Though coma might be clinically absent, it does not exclude the diagnosis of myxedema coma. Other vital systems that are affected are neurologic, cardiovascular, pulmonary, renal and gastrointestinal systems. The rationale of reporting on this case is that it is a fairly rare complication of hypothyroidism. While hypothyroidism affects about 8% of women and 2% of men over 50 years old, this complication is much less frequent. We also reported on this case because it is a metabolic and cardiovascular emergency that, if not diagnosed and treated rapidly, can lead to death in nearly half of cases. This case involved symptoms that represented a shock-like state, that could easily have been confused as having other etiologies.

Grant Opportunities for Sunny Buddies

Sean Dugan & Sean McElligott

Faculty: Kenton Kramer, PhD (Office of Medical Education/Department of Tropical Medicine, Medical Microbiology & Pharmacology, JABSOM)

Sunny Buddies is a non-profit organization founded in 1998 by Melissa Lee, a medical student at the University of Hawaii's John A Burns School of Medicine. There are many goals of the program, including: 1) bridging the gap between individuals with mental retardation and society 2) providing services and support to individuals with mental retardation and their caretakers 3) developing meaningful friendships between individuals with developmental disabilities and volunteers 4) challenging societies views on those with mental retardation 5) promoting friendships among others with similar disabilities. By meeting the aforementioned goals, Sunny Buddies strives to help the client gain a sense of leadership, importance, self-confidence, and autonomy with others in their community. Concurrently, Sunny Buddies facilitates interest in the field of psychiatry among the medical students. In order to offset the cost of insurance and other expenses, we have researched several organizations and have found many promising grant

opportunities, including grants with the National Institute of Health, SEEDS, Atherton Family Foundation, Cooke Foundation, and the Hawaii Community Foundation.

Cardiovascular Risks Among Elderly Patients Who Decrease Hypertension and Cholesterol-lowering Drugs Due to Cost

Keith Errecart

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Background: As many as 1 in 4 elderly patients skip or stop their medications because of cost. We examined how often seniors who decreased use of hypertension and cholesterol-lowering drugs due to cost had a history of cardiovascular risks such as heart disease, stroke, or diabetes. *Methods:* A 2002 cross-sectional telephone survey of 887 seniors with a history of high drug expenditures in a single Medicare managed care plan in one state. We asked participants which, if any, medications they used less, stopped, or did not start due to cost in 2002. Participants also reported whether they had a history of heart disease (heart attack, chest pain, “hardened arteries”, heart failure), stroke, or diabetes. *Results:* Over 1 in 3 (346/887 = 39%) of seniors skipped or stopped medications due to cost in either 2001 or 2002, and 250 recalled which medications they decreased. For the 41 of 250 elderly patients (16%) who decreased a hypertension drug, nearly 2/3 (63%) had a history of heart disease (39%), stroke (20%), or diabetes (24%). Among the 75 elderly patients (30%) who decreased a cholesterol-lowering medication, over three-fourths (79%) had a history of heart disease (50%), stroke (22%), or diabetes (30%). *Conclusions:* Two-thirds to three-fourths of seniors who stopped hypertension or cholesterol-lowering drugs because of cost had a history of heart-disease, stroke, or diabetes. Health plans should consider lowering cost-sharing for these medications especially for patients with significant cardiovascular comorbidities.

Aleurites moluccana (kukui) antibiotic activity against the causative organisms of skin infections: S. aureus, S. epidermidis, S. pyogenes, and P. aeruginosa

Jill Furubayashi and Teresa Walsh

Faculty: Shannon Hirose-Wong, PhD (Native Hawaiian Center of Excellence)

The accounts of the first Western visitors to the Hawaiian Islands reported that Native Hawaiians were a robust, thriving population. Traditional Native Hawaiian medical practitioners (kahuna la‘au lapa‘au) were an integral component of maintaining the health and wellness of their communities, providing medical, psychological, and spiritual care³. Medicinal plants (la‘au) were used by Kahuna La‘au Lapa‘au to treat a broad spectrum of diseases. The bark, oil, and sap of the kukui (Aleurites moluccana) were used by kahuna la‘au lapa‘au to treat a broad spectrum of disease, including constipation, oral thrush, cold sores, skin ulcers, deep bruises, and sore throat. Kukui was used to treat numerous skin disorders, including cuts, shingles, measles, chickenpox, and sunburn. Research has

examined the use of kukui as an antibiotic and anti-inflammatory agent. One study reported that kukui extract has antibiotic activity against two species of bacteria that commonly cause skin infection, *Staphylococcus aureus* and *Pseudomonas aeruginosa*. Skin infections are common forms of skin disease and are among the most prevalent infections of all age groups. Bacterial skin infections, including impetigo and cellulitis, are most commonly caused by the gram-positive aerobes, *Staphylococcus aureus* and *Streptococcus pyogenes*. *S. pyogenes* also causes ecthyma and erysipelas. *S. aureus* is a leading cause of folliculitis, furuncles, carbuncles. Folliculitis is also caused by *Pseudomonas aeruginosa*, a bacterium frequently found in swimming pools and hot tubs. *Staphylococci epidermidis*, another gram-positive aerobe, is the causative organisms of skin infections associated with implanted catheters and prosthetic devices. These infections may result in septicemia and infect other organs, resulting in serious complications, including peritonitis, empyema, meningitis, and toxic shock syndrome. The emergence of drug resistant strains of pathogenic organisms, including *S. aureus* and *P. aeruginosa*, calls for the discovery of new antibiotic agents. Thus, medicinal plants, such as *A. moluccana*, that were used by Native Hawaiian practitioners to treat a broad spectrum of infectious disease, should be evaluated for their antibiotic properties. The purpose of this study is to evaluate the use of *A. moluccana* (kukui) oil in the treatment and prevention of skin infections. The antibiotic activity against the bacteria *S. aureus*, *S. epidermidis*, *S. pyogenes*, and *P. aeruginosa* will be examined. The traditional Native Hawaiian use of kukui to treat skin infection and the antibiotic activity against other bacteria that cause skin infections suggest that kukui may have antibiotic activity against *P. acnes* and, therefore, be useful in the treatment and prevention of skin infections.

Resources For Caretakers Of A Loved One With Alzheimer's Disease

Andrea Garland

Faculty: Esther Lara, M.S.W (UC Davis Medical School)

Introduction: Alzheimer's is a disease that strikes many elderly who have limited ability to seek out resources for themselves. The number of elderly patients who rely on caretakers is growing due to economic pressure and lack of health care resources.

Caretakers who are put in the position of caring for a loved one with Alzheimer's disease have special needs. Learning aspects of the disease process, how to deal with cognitive decline as well as finding support in the community are essential.

Methods and Materials: Different community resources were obtained by asking around in the home health care agency. From the first community resource, a list of resources was generated. Stakeholders were then interviewed via telephone or in person. Meetings were informational to get more of a sense of the different facilities and aspects of Alzheimer's care that were dealt with.

Results: A power point presentation was created to inform caretakers about the disease and possible resources available in the northern California area.

Discussion/ Conclusion: It is evident that those afflicted with Alzheimer's do not really have a coherent locale to turn to for help. It is often difficult for caretakers to access the internet which is where most of the resources for help are located. A good solution to the

problem is to have lists of resources readily available in doctor's offices. After researching Alzheimer's care in northern California, it is clear that it is not readily discussed and there is a huge social stigma associated with memory loss. As a caretaker for the summer, I can affirm I went through all stages of denial, blaming, grief, making jokes, and passing blame onto others. It is important for caretakers to learn new strategies for dealing with patients who suffer cognitive decline. Because so little is really known about the progression and treatment of the disease, psychosocial support of the patient and caretaker is important. In conclusion, resources where caretakers can go to learn more information as well as facilities listed out by services offered for different stages of the disease is essential. In order to make firm conclusions about gaps in Alzheimer's care in the Sacramento area, I would need to do a more thorough assessment which includes a full list of resources and interview more employees at each place to get a better assessment of the level of care and services rendered.

The Role Of Toll-Like Receptors In The Pathogenesis Of Systemic Lupus Erythematosus

Maude Gibbs

Faculty: Karen Yamaga, PhD (Department of Tropical Medicine, Medical Microbiology & Pharmacology)

Systemic lupus erythematosus (SLE) is an autoimmune disease characterized by autoantibodies, which form immune complexes that cause inflammation and injury in multiple organs including kidneys, skin, joints, CNS, CV system, and blood elements. The incidence of SLE is higher in females than in males and is more common in African-American women. Several autoantibodies have been identified in SLE, including those against nuclear proteins (antinuclear antibodies), blood antigens, and proteins complexed to phospholipids (antiphospholipid antibodies). Genetic, environmental, and immunological factors are thought to be implicated in the pathogenesis of SLE. Recent studies highlight the role of toll-like receptors in the pathogenesis of SLE, specifically TLR7 and TLR9, which bind to nuclear proteins. TLRs detect pathogens, activate innate immunity, and elicit inflammatory responses; studies suggest that they may also have the potential to recognize self-antigens and trigger autoimmune diseases. TLR7 and TLR9 are expressed exclusively on B cells and plasmacytoid dendritic cells (PDCs). Binding of ligand to TLR activates transcription factors, which in turn, induces expression of inflammatory cytokines. High serum levels of $\text{INF-}\alpha$ are consistently observed in SLE patients and correlate with disease activity and severity. Barrat (2005) showed that mammalian DNA- and RNA-immune complexes are potent self-antigens for TLR9 and TLR-7, respectively, and induce $\text{INF-}\alpha$ production by PDCs, the principal source of $\text{INF-}\alpha$. Inhibiting signaling through TLR7 and TLR9 could control the pathway to $\text{INF-}\alpha$ production and prevent autoimmune disease. In the study, oligodeoxynucleotide (ODN)-based inhibitors of TLR9 receptor signaling were developed and found to block stimulation by ICs, thereby demonstrating that ODNs can inhibit $\text{INF-}\alpha$ production following TLR9 activation. In another similar study (Lenert, 2006), ODNs were recognized by both autoreactive B cells rather than by non-DNA follicular B cells, proposing the potential of ODNs to suppress disease-specific

autoimmune B cell reactivity, while sparing non-autoimmune and protective humoral and T-cell-mediated antimicrobial immune response. TLR9 exclusively recognizes cytosine-guanosine-dinucleotide (CpG) motifs on microbial CpG-DNA, modulating the innate and adaptive immunity in SLE. ICs containing unmethylated CpG-DNA (bacteria) also activate TLR9, leading to T-cell-independent activation, proliferation, and autoantibody production. Purified mammalian DNA, however, is not immunostimulatory for reasons that provide protection against autoimmunity. Lenert proposes that circulating DNA in the serum of lupus patients is modified and, therefore, drive the activity of autoreactive B cells. If TLR9 is involved, this further supports targeting TLR9 for therapeutic intervention in SLE.

Multiprofessional Health Education in Waianae.

Aimee Grace

Faculty: AHEC at the Waianae Coast Comprehensive Health Center, Steven Bradley, MD

The mission of **Ho'oma'a Program** is to "provide a community-directed, non-traditional, multiprofessional educational opportunity for students in nursing, medicine and social work in partnership with the Wai'anae Coast community, the University of Hawai'i, and the Waianae Coast Comprehensive Health Center." It offers opportunities for health professions students to learn from health care providers who are steeped in the ethics of community health. Advanced practice students have the opportunity to learn about community health issues and to understand the impact of culture on the delivery and acceptance of health care. Students provide needed resources to both providers and patients. Through participation in case conferences and the presentation of a Cultural Rounds based on a WCCHC patient, students develop multiprofessional skills. There is also the opportunity for student-directed activity, such as designing community needs assessments and education materials, assisting in grant development and funding, and developing research projects. (<http://www.hoolokahi.net/>)

Diabetes Education in Public Schools in Hawaii

Victor Harrison

Faculty: Shannon Hirose-Wong, PhD (Native Hawaiian Center of Excellence)

The incidence of diabetes in children is increasing and schools are expected to include these students effectively in their curricula while also ensuring their safety. Parents nationwide have voiced dissatisfaction with the treatment their child receives at school. More information is needed to determine if similar problems exist for students with diabetes in Hawaii's public schools. This research sought to (a) describe the experiences that school health aids have had while caring for students with diabetes and (b) identify concerns that can be addressed to better incorporate students in school curricula and keep them safe and healthy. Health aids from Honolulu and Hilo participated in two separate focus groups. Themes emerging from each focus group were identified and compared. Results highlight the need for better diabetes education among school personnel. More training on diabetes management would alleviate anxiety for all parties involved.

Factors Influencing High School Students' Desire To Work In The Health Care Field

Nicole Higa

Faculty: Mike Fukuda, MSW & Gwen Naguwa, MD (Office of Medical Education, JABSOM)

Influencers of career choice among high school students have been an important focus of college, graduate and professional school recruitment programs. In this study, students (n = 49) in the Health Academy class at Farrington High School (Honolulu, HI) were surveyed to examine factors influencing their desire to work in the health care field. Based on the results of the survey, a follow-up focus group was also conducted. Students were asked to indicate what careers they intended to pursue and what experiences or factors affected their career choice. The majority of the students indicated that their career choice was to become either a physician or nurse. The desire "to help people", the "high pay and benefits", and having family members who worked in the health care field were major influencers of career choice. For most of the students, witnessing a person of the same ethnicity working in their career of choice was not a factor. Although only a few students had ever worked or volunteered at a hospital/clinic, those who had this opportunity reported that these experiences increased their interest in working in the medical field. These results suggest that recruitment programs should focus their efforts on highlighting the major influencers reported above and less emphasis should be placed on ethnicity-specific recruitment. Also, it seems that providing more opportunities for high school students to work/volunteer in a clinical setting would greatly increase their desire to work in the health care field.

Assessing The Health Needs of The People of Fiji

Peter Huonker and Christopher Costa

Faculty: Mylene Hyunh, Mandy Cude, Dale Vincent (Fiji Ministry of Health & The United States Armed Forces, Telemedicine, JABSOM)

In the year 2000, a massive health assessment of all of the people of Fiji was conducted by the Ministry of Health, in which residents were questioned as to their use of kava, alcohol, tobacco, and their health was assessed by taking of blood pressure, random glucose, BMI, and cholesterol levels. After the data was analyzed, it was understood that kava, alcohol, and tobacco use was higher than expected and diabetes, obesity and hypercholesterolemia were major chronic diseases affecting a vast proportion of the nation. Interventions were implemented to curb the rising non-communicable disease rate through preventative medicine and to combat the rising use of kava, alcohol and tobacco through public awareness. In a medical mission to Fiji put on by the United States Armed Forces, free clinics were held in four villages over four days in which residents of these neighborhoods were invited for free health check-ups and primary care for any illnesses. The objective were 1:) to determine if the interventions placed by the Ministry of Health after the last study have been effective in combating NCDs and risk factor intervention, 2:) to determine the different health status and needs of rural and sub-urban villages, and

3:) to determine the interplay between health status and dentition of Fijians. The villages were selected by the ministry of health as being medically underserved and consisted of two rural villages whom lived off the land, and two villages in sub-urban areas, whom held the lifestyle of urban peoples but did not receive the same medical care as these peoples. Using a convenience sample of all the people who attended the clinic as the study sample, 1000 people were asked about their kava, alcohol and tobacco use, as well as their blood pressure, glucose, and cholesterol levels were recorded, and their chief complaints at the clinic and treatment received. Dentition was also checked. The data received is still being analyzed and results are still unknown. The results, when known, will be made available to the Fiji Ministry of Health so that they can tailor their interventions as needed and decide if different interventions are necessary in these two different types of living situations.

Area Health Education Center at Kokua Kalihi Valley

Maxine Karimoto, Terri Koyanagi, Lana Hirai

Faculty: Kokua Kalihi Valley Area Health Education Center, Bradley Chun, MD

Kokua Kalihi Valley (KKV) is a community center that serves the needs of its culturally diverse population. Because this community is so dependent on these services, it is imperative that local needs are both correctly identified and efficiently met. One aspect in their care is devoted towards the health and wellness of the female adolescent population (14-18 years of age) within Kalihi Valley. Between October 2005 and May 2006, while working under KKV's Community Center in Excellence (CCOE) for Women's Health program, an assessment tool was modified and utilized to determine the health care needs of adolescent females in this community. Topics covered included access to medical and dental care and insurance, nutrition, exercise, body image, risky behavior (substance abuse, car safety), depression, stress, sexual behaviors, and abuse. With a focus on intervention and prevention, the assessment tool was administered in a one-on-one interview format in order to immediately identify "at risk" female adolescents and provide services and education in a timely fashion. Results showed there is significant interest in nutrition, exercise, stress, and sex education. Services to address these interests are already available at KKV. Therefore, the next step should be to focus on devising a program that bridges the gap between interest and services provided.

Frequency of Parent-Child Shared Book Interaction Among English and English as a Second Language Speakers at Queen Emma Clinics

Kristyn M. Kitabayashi

Faculty: Meta Lee, MD (Department of Pediatrics, JABSOM)

With the advent of the federal No Child Left Behind Act, greater emphasis has been placed on reading proficiency among school children. In Hawai'i, based on the most recent HSA testing; only about 38-58% of public school students were proficient in reading. Shared book reading plays an important role in early childhood development via language acquisition and school readiness. The American Academy of Pediatrics currently advises parents to read to their children every day from age 6 months. Reach Out and Read (ROR) is a physician-

initiated literacy effort that seeks to increase parent-child book interactions by distribution of age- and developmentally-appropriate books to children at their well-child visits. The program typically targets children of lower socioeconomic classes and English as a Second Language speaker. This study was part of a larger study to determine the effects of a ROR intervention on parent reading to children. It was hypothesized that English speaking parents would read to their children more frequently than English as a Second Language parents. Pre-intervention data was collected via written surveys asking parents of children between the ages of 6 months to 5 years who visited the Queen Emma Clinics (QEC) what activities they do with their children, specifically if they read to their children and how many days a week they do so. Phase 2 of the project involves a ROR reading intervention by QEC pediatricians, and phase 3 of the project will determine if the intervention increased the frequency of parent-child book interactions.

Evaluating The Level of Comfort in Sexual Health Counseling Among Roosevelt High School Students

Ricky Amii, Brianna Lau, Bevan Ly, Kenneth Sakata

Faculty: Ivy Nip, MD, Gwen Naguwa, MD, Mike Fukuda, MSW (Office of Medical Education)

Sexual Education and open communication in the high school setting is integral to preventing sexually transmitted diseases (STDs) and unwanted pregnancies. Our program used medical student to teach sexual health, augmenting the Department of Education health curriculum through interactive presentations and small group discussions. An attitudinal survey using a 10-point Likert scale was administered through the University of Hawaii, John A Burns School of Medicine's School Health Education Program (SHEP). High school students were asked with whom they would most likely discuss sexual health issues. The survey specifically assessed the students' comfort levels towards their teachers, friends, parents, doctors and SHEP educators. A pretest and post was administered to two different health classes at Roosevelt High School asking numerically scaled questions pertaining to their comfort levels in discussing their own sexual health. The results revealed that class one (n=19) improved comfort on posttest talking to counselors ($p<0.05$) and doctors ($p<0.01$); class two (n=21) with parents ($p<0.05$), SHEP students ($p<0.01$) and talking to the opposite gender ($p<0.05$). The results of this study indicated that the SHEP program is effective in increasing student comfort levels in discussing issues related to their sexual health.

Assessing adult incontinence pads and diapers and determining efficacy in preventing moisture from maintaining contact with skin

Adrienne Ma

Faculty: Ian Oyama, MD (Department of Obstetrics & Gynecology, JABSOM)

The objective of the research study was to test the efficacy of the different incontinence pads and diapers available to consumers in pulling moisture away from the skin after urination. This is of particular interest for those who are bedridden or spend most of the time sitting, as prolonged moisture on the skin may cause breakdown of the skin and

increase risk of decubiti. To measure this, we tested the absorbency by wetting each type and brand of incontinence pads and diapers with three different amounts of wetness, using three pads/diapers per amount. Then by placing a paper towel after wetting and sitting for 10 seconds immediately after wetting, and then again after two minutes of letting the liquid soak in we were able to measure the amount of absorbency. To measure this, we measured the amount of wetness on the paper towel immediately, taking into account the spread of the water on the paper towel. Data analysis and results still pending.

What's For Lunch? Student Food Choices In Hawaii's Public Schools

Lauren Maeda

Faculty: Mike Fukuda, MSW (Office of Medical Education, JABSOM)

The number of adolescents who are overweight or obese today is significantly higher than ten years ago. Many attribute the rise in obesity to decreased physical activity and poor eating habits. Thus, it is essential for schools to help develop healthy eating habits in students from a young age. The federal government has attempted to ameliorate this situation by establishing nutritional guidelines for school lunches. Although students are offered a well balanced meal, their decision or exclusion of what to eat from the school lunch may alter its nutritional value. In this study, students were surveyed from three public schools on Oahu, Hawaii. Students were asked to report whether they ate school lunch, what they ate, and whether or not they perceived their food choices as healthy. The study found roughly half of the students polled ate school lunch. Of these students, 98% preferentially ate the main dish and 77% drank milk. However, there was much lower consumption of the fruit (48%) or vegetable (40%) that came with the meal. The study also found that 93 % of the students who ate school lunch believed their meal choice was healthy. The conclusion of this study is many students avoid eating fruits and vegetables with their school lunch, but still perceive it as a healthy meal choice. Areas of future research could include reasons why students have a misconception about their eating habits as well as ways to improve nutritional education. It is possible that nutritional education needs to be more concrete, instead of using abstract ideas such as the food pyramid. Finding an effective strategy for teaching healthy eating habits would be extremely beneficial in helping students to make good food choices.

Toxicity of Noni Juice on Hepatocytes: An Investigative Look

Rick Mai

Faculty: Shannon Hirose-Wong, PhD & Kenton Kramer, PhD (Native Hawaiian Center of Excellence & Office of Medical Education/Department of Tropical Medicine, Medical Microbiology & Pharmacology)

In Old Hawaii, all parts of the Noni plant were used to treat various external and internal ailments. By 1999, various studies have shown that Noni has anti-cancer effects and, thus, is useful in the treatment of cancers. As such, Noni has risen in popularity and more individuals are taking Noni juice as a prophylactic. Recently, however, several publications have documented the emergence of liver damage in individuals who drink

Noni juice daily. Therefore, with the increased use of Noni by the public and the increase in liver damage due to prophylactic use of Noni juice, the goal of this research is to determine if Noni juice or its constituents damage liver cells. The hypothesis is that long-term exposure to Noni juice will inhibit the growth of hepatocytes and damage them. Liver cells are incubated with fresh Noni juice extracts, commercial Noni juice preparations, or damnacanthal. The hepatocytes are examined microscopically for changes in size, shape, and morphology to determine the amount of cellular damage. The amounts of proteins produced by the cells are also measured using fluorescent microscopy to determine changes in the hepatocytes' growth. The measurements are analyzed using SPSS to determine their significance. Since damnacanthal is a tyrosine kinase inhibitor and tyrosine kinases are important in the phosphorylation cascade that allows cells to divide and grow, damnacanthal and Noni juice damage hepatocytes by blocking the cellular signaling pathway that is necessary for the cells to replicate and grow. Thus, while this effect is desirable in cancer cells, such inhibition is undesirable in normal cells because it leads to cell death. Future plans for this research include repeating the experiment using animal models instead of cell cultures and testing extracts from different parts of the Noni plant.

Assessing Health Needs of Residents of the Kakaako Homeless Shelter

Carrie Marshall

Faculty: Jill Omori, MD (Department of Family Practice, JABSOM)

Introduction: In May of 2006, the University of Hawaii John A. Burns School of Medicine's Hawaii H.O.M.E. (Homeless Outreach and Medical Education) Project opened a student-run, free homeless clinic at the Kakaako Shelter. The opening of the clinic marked a year of research and planning on how the clinic could best meet the needs of this homeless population, a largely understudied group. **Methods:** Before opening the clinic, a Health Needs Assessment was developed by the H.O.M.E. Project and conducted over two nights at the shelter. The purpose of the Health Needs Assessment was to collect basic demographic information on all members of the shelter, including those families with kids, as well as current and past medical histories and current access and use of medical facilities. This information was then used to inform the H.O.M.E. Project on the most pressing needs of the residents so that the most appropriate medications and supplies could be purchased as well as identify the need for accompanying social services such as bus passes, pre-employment screenings and Medicaid forms. **Results:** All 270 residents were surveyed. The most common chief complaints of residents were basic, chronic conditions such as diabetes that require glucose and blood pressure monitoring as well as consistent access to medications. Other current health concerns include hypertension, obesity, immunizations and cellulitis. When residents were asked which health service they would most like in the future, over 80% indicated that they would like dental services offered at the clinic. **Discussion:** The results of the Health Needs Assessment allowed Project staff to plan the opening of the clinic to be able to provide the most needed services and supplies as identified by residents on a very limited budget. **Future Plans:** results of the Assessment provided a roadmap for several services desired by residents that can be worked towards

implementing, including dental services and interpretive services.

Health and Well-Being Amongst Native Hawaiians

Haane Massarotti

Faculty: Shannon-Hirose Wong, PhD and Joseph Kaholokula, PhD. (Native Hawaiian Center of Excellence)

Health-related quality of life determinants are multidimensional. The Short Form- 36 Health Survey is a generic health related quality of life questionnaire. Past research has shown that culture may determine the conceptualization of health-related quality of life. The purpose of this study was to elucidate the determinants of quality of life amongst Native Hawaiians. The study was performed using a focus group of eight Native Hawaiians with four-open ended questions about health and well-being and quality of life. The data implies that the ocean or nature, physical health or exercise, and spirituality, or a relationship with God are important components of health-related quality of life.

The Effectiveness Of Abstract Versus Concrete Thinking Approaches To Lecturing High School Student

Dawn Matsui & Christopher Chong

Faculty: Gwen Naguwa, MD (Office of Medical Education & Department of Pediatrics, JABSOM)

Research on the effectiveness of different approaches to lecturing was studied at Farrington High School under the School Health Education Program (SHEP). Despite Jean Piaget's theory on cognitive development of abstract thinking at an earlier age, the SHEP lecturers observed, on several occasions, that abstract teaching styles hindered the Farrington 10th and 11 th graders' ability to recall certain facts. In the presentations, the SHEP lecturers would use metaphors to enrich the lesson. However, when asked to recall the information, the students would remember the comparison concept but not the key concept. Following this observation, we expected that in the short term, concepts taught using abstract thinking in high school students is not retained as well as concepts taught using concrete thinking. Using two randomly selected groups and teaching each group the same content on the respiratory system, the first with metaphors and the second without, knowledge was measured with a 5 item content test and attitude was measured using a 5 point Likert scale. Factorial analysis was used to determine differences in knowledge gained and attitudes toward teaching style preferences between the two groups. There was significant improvement for both groups on knowledge gained, but no differences in knowledge gained between groups. There were also no differences in attitudes toward teaching style preferences. Upon examination, confounding variables might have affected the outcomes. Primarily, students selected for the study were enrolled in the Health Occupations class, designated for students interested in careers in the health field; these students are self-selected compared to the rest of the student body.

Efforts to improve the knowledge and interest of science among Hawaii third graders, Ke Ola Health Education Program, Hawaii 2005-2006

Margaret Ochner, John Pang, Mark Valdez, Kristal Wimmer-Kunitomo
Faculty: Kalihi Palama Health Center Area Health Education Center Faculty, Glenn Rediger

With the recognition that children were being lost in an educational system that did little to equalize the differences in social and economic barriers, the federal government passed the No Child Left Behind Act (NCLB) of 2001. By requiring elementary and secondary schools to demonstrate proficiency in reading and math according to standards set by the Department of Education, lawmakers inadvertently created a new dilemma in the educational system. Subjects outside of reading and math, like science, are being reduced at a startling level? The NCLB does not take science into account until 2007, when it will begin to test children at least once in each of three grade spans each year. In the absence of any science requirement in educational standard testing, the United States Department of Education has witnessed a continuous decline in science achievement among students. According to a study done by the National Assessment of Education Progress (NAEP), science scores for the year 2000 demonstrated a lower than average performance by the children of Hawaii (132) when compared to the national average (149)? Noting this decline, the objective of this study was to give the third grade students of Kaiulani Elementary and Likelike Elementary schools exposure to biology and an opportunity to learn more about science, which is somewhat lacking in their normal NCLB-based curriculum. The authors designed a survey instrument to evaluate the knowledge of third graders in basic cardiovascular and pulmonology science as well as their interest and confidence in their science knowledge, before and after the lesson on heart and lung anatomy, physiology, and risk behaviors. The authors' objectives were to improve the third graders' knowledge of heart and lung anatomy, physiology, risk behaviors and interest and confidence in science.

Asthma Chronic Severity and Medication Compliance in Pediatric Asthma Patients Followed for Two Years Post-intervention

Corilyn Pang
Faculty: Rodney B. Boychuk, MD, Charles J. DeMesa, MPH (Kapiolani Medical Center Emergency Department, Department of Pediatrics, JABSOM)

INTRODUCTION: Asthma continues to be a major concern among pediatric patients. Emergency department-based educational interventions have been found to be effective in improving compliance with national guidelines and quality of life. However, the length of effectiveness of such interventions has not been determined. OBJECTIVES: It was hypothesized that there would be a considerable decline in compliance by the 2-year interview conducted during this study. This study reports asthma chronic severity classifications and medication use at a two-year follow-up of asthmatic patients who received an emergency department-based educational asthma intervention.

METHODS: A multi-site, prospective, cohort study was conducted on patients aged 1 to

18 years who presented to one of four emergency departments with wheezing, bronchospasm, or asthma. At the time of encounter, patients who consented were interviewed regarding asthma severity, medication use, and quality of life indicators. They then received a multi-faceted educational intervention by program staff, including in-person teaching, lung models, and a DVD presentation. Asthma chronic severity classification, quality of life and medication compliance were then assessed by phone interviews at 3 weeks, 3 months and 2 years post-intervention.

FUTURE PLANS: Follow-up should be conducted on a larger number of patients with more frequent interviews between 3 months and 2 years to more accurately pinpoint the time at which retention of asthma education begins to drop so that this can be prevented. Future asthma educational interventions should include more frequent reinforcement of self-management principles and emphasis on the importance of medication compliance. The barriers to implementation of self-management principles need to be studied further so that overall compliance can be improved to prevent morbidity and mortality in children.

Comparison of Attitudes towards Early Reading between ESL (English as a Second Language) and Non-ESL Parents in a Low-Income, Pacific Island Population: A Clinic-Based Study

Jason Pirga and Kristyn Kitabyashi

Faculty: Meta Lee, MD (Department of Pediatrics, JABSOM)

INTRODUCTION: Illiteracy is a very important and relevant public health problem in Hawaii and the United States. It is a known risk factor for academic failure and propagates the cycle of poverty. Risk factors for childhood illiteracy include having fewer children's books in the home, low parental income and educational achievement, and learning English as a second language. Reach Out and Read (ROR) is a clinic-based, literacy promotion program aimed at households with children between the ages of six months and five years. The success of ROR has been documented in several studies, typically involving low-income families. However, to the best of our knowledge, the effect of literacy promotion in a low-income, Pacific Island population has not yet been studied. The objective of this study was to compare and contrast attitudes and behaviors towards early reading between parents who were native English speakers and those who spoke English as a Second Language (ESL). **METHODS:** We conducted a pilot study to evaluate attitudes and behaviors of ESL and non-ESL parents towards reading to their young children. The children were patients at the Queen Emma Clinics, which also served as the site for data collection. Data were collected by interview and survey from 108 parents of children between the ages of 6 months and 5 years. This project is not yet complete.

Laparoscopic skills training – How much practice is enough on a Virtual Simulator?

Thomas Powers

Faculty: Kenric M. Murayama MD (Department of Surgery, JABSOM)

Computer-based virtual reality laparoscopic surgical simulators can provide assessment of operative skills such as economy of motion, time to complete tasks, and errors during task performance. Understanding when performance of tasks reaches a plateau is important in developing skills curricula to determine the appropriate number of practice sessions. Our aim was to determine the number of repetitions necessary to demonstrate a plateau in improvement for novice surgeons using the Minimally Invasive Surgery Trainer (MIST-VR). **Methods:** 20 novices (3 PGY-1 surgery residents and 17 medical students) with no prior formal laparoscopic skills training were recruited to participate in a laparoscopic skills curriculum using the MIST-VR. Following a basic introductory training session on the simulator, participants were tested 3 times on 6 laparoscopic tasks set to a high level of difficulty to assess skill improvement. Between each of the three tests, participants practiced the 6 skills at a medium level of difficulty 3 times. The skills were performed in the following order: Acquire Place (AP), Transfer Place (TP), Traversal (TV), Withdrawal Insert (WI), Diathermy (DI), Manipulation Diathermy (MD). Each skill involved 3 repetitions with each hand in an alternating fashion beginning with the left hand. Measurements recorded for each task included time to completion, number of errors, and economy of motion (EOM). Time, errors, and EOM were combined to calculate individual task scores. A total score was calculated for each test by combining each of the 6 individual task scores. Lower scores indicate improved performance. All comparisons were made using a T-test with significance at $P < 0.05$. Values are reported as mean \pm SD. **Results:** After three practice sessions (Test 1 to Test 2) the following four tasks improved significantly, but failed to improve thereafter: TV – (429 \pm 266 to 191 \pm 79), WI – (77 \pm 34 to 52 \pm 16), DI – (102 \pm 24 to 70 \pm 16), MD – (329 \pm 90 to 253 \pm 124). Performance of task TP improved from Test 1 (115 \pm 53) to 2 (87 \pm 44), but significant improvement did not occur until Test 3 (76 \pm 47). Overall performance improved significantly between Test 1 (1136 \pm 347) and 2 (723 \pm 255), but not thereafter (658 \pm 269). Practice failed to result in significant improvement in task AP. **Conclusion:** Novices significantly improved overall performance after 3 practice sessions; additional practice sessions did not result in significant improvement. Performance improvement of individual tasks TV, WI, DI and MD reached a plateau after 3 practice sessions, while TP task performance plateau took 6 practice sessions. As simulators are used more frequently in surgical training, determination of the number of practice sessions necessary to reach a plateau in performance is important in curriculum development; further practice sessions fail to result in improved performance of the tasks.

Assessing Nutritional Knowledge And Dietary Practices Of Native Hawaiian Children

Stephen Pulido, Joleen Aguon-Lopez, and Healani Calhoun

Faculty: Shannon Hirose-Wong, PhD (Native Hawaiian Center of Excellence)

Childhood obesity is a growing problem in the United States. The frequency of overweight children has tripled over the past 30 years. More than 30 % of children in the United States are overweight or obese. Forty percent of obese children and about 80% of obese adolescents become obese adults. Obesity during childhood is a problem because it can lead to the development of chronic medical problems. Complications and diseases associated with childhood obesity include diabetes mellitus type 2, cardiovascular disease, obstructive sleep apnea, orthopedic problems and hyperandrogenism. These problems may also increase risk for early morbidity and mortality.

Diet plays an important role in obesity and its associated health risks. A healthy diet that is low in calories and low in fat can lower the risk of health problems such as heart disease, type 2 diabetes mellitus, and cancer. Native Hawaiians are more likely to be obese or to become obese when compared to other ethnic groups in Hawaii. Obesity presents a problem to Native Hawaiian because they have high rates of morbidity and mortality from obesity related diseases such as cardiovascular disease, type 2 diabetes, and some forms of cancer. Information on childhood obesity in Native Hawaiian children is limited. The purpose of this study is to focus on the diet and nutrition component of obesity in Native Hawaiian children and find out what type of foods Native Hawaiian children are eating through the use of surveys and focus groups. The hypothesis is that although Native Hawaiian children possess sufficient nutritional knowledge, they are not making healthy food choices.

Increasing Denture Needs in Hawaii and Available Financing Options

Tiare Salassa

Faculty: Shawn Sumida, MD

During the past two years, an increasing number of students have been requesting funding from the Howard & Dorothy McGuire Memorial Fund for dentures for the patients with whom they work. While many of these patients have medical insurance they typically do not have dental coverage. The McGuire Fund is designed as a source of funding from which medical students can apply to in the name of their patients to help purchase basic necessities related to their health care. The maximum amount awarded is \$300 per year per patient. The objective of this project was to explore possible reasons behind this recent increase in denture requests as well as to learn more about alternative funding options and less expensive ways which we might help these patients obtain dentures. Methods used to gather information included literature review, speaking with different leaders in the dental health community and contacting various labs responsible for making low cost dentures. Through this research and correspondence, it was discovered that although there has been an increase in the number of requests for dentures received by the McGuire Fund, Hawaii remains number one in the nation for utilization

of dental care and has the highest rate of dental insurance coverage. Additionally, Hawaii has the lowest rate of edentulous persons in the US. In terms of lowering cost for low-income individuals requiring dentures, although affordable denture programs and companies offering payment plan to obtain dentures exist nationally, no such services are offered in Hawaii. At present, further investigation into the presence of private labs in the state that may be willing to negotiate payment plans remains incomplete.

Dehydration and Hyponatremia following the Ironman World Championship Triathlon

Thomas Sanford

Faculty: W. Douglas B. Riller, Laura Dierenfeldt, Robert R. Laird, Dennis S. Yamadat (North Hawaii Community Hospital, Kona Hospital, John A Burns School of Medicine)

There are two possible etiologies of exercise-associated hyponatremia (EAR): dilution of existing sodium stores by fluid overload or depletion of sodium stores through sweat. Although most studies in Ironman triathlons support a dilutional mechanism for EAR, most of previously studied races were in temperate climates. Thus, the purpose of this study was to determine the etiology of EAR in an Ironman contested in the heat. To monitor fluid loss over the course of the race, athletes were weighted at race registration, immediately prior to the race, immediately after the race, and one day after the race. Upon finishing, 65 athletes provided blood samples which were analyzed by 1ST A T to detect hyponatremia (plasma sodium <135 mmol/L). 59 of the 65 athletes also provided urine samples. Athletes lost an average of 2.6% of their body mass during the race, but gained 1.2% of their body mass during the day following the race. This is less weight loss than reported at other Ironman triathlons, presumably because these athletes lose less weight from sources other than water. The incidence of hyponatremia was 20%. There was an inverse relationship between weight loss and post-race sodium levels. However, weight loss of hyponatremic athletes varied widely (-4.1 % to +6.1 %), indicating the both the proposed mechanisms may account for the high incidence of hyponatremia in this sample. Data from urine samples indicate that fluid retention is not due to high levels of anti-diuretic hormone. **Conclusion:** Hyponatremia may be caused by either sodium loss, fluid overload, or a combination of the two. The best measure to prevent this is to ingest sodium while exercising and to educate at-risk athletes about appropriate fluid intake practices.

Depressive symptomology and neurocognitive function among aging HIV patients

Sheri Shimizu

Faculty: Bruce Shiramizu, MD (AIDS Clinical Trials)

Objectives: This study explores the relationship between depressive symptomology and neuropsychological performance in a cohort of aging HIV-1 infected individuals.

Methods: A cross-sectional analysis was performed within the *Hawaii Aging with HIV Cohort*. Two hundred eighty seven HIV-1 seropositive participants (157 older and 128 younger) were administered a battery of neuropsychological (NP) functioning tests to measure performance in most major cognitive domains including psychomotor speed, memory, attention, sensory-motor skills, and higher level cognitive and intellectual

functions. Raw scores on NP tests were transformed to standardized z-scores using published age- and education- matched normative datasets. Depressive symptomology was measured using the Beck Depression Inventory (BDI). **Results:** Mean BDI scores were significantly higher in the HIV-1 seropositive cohort than the seronegative cohort. There were no differences in mean BDI scores or NP scores when comparing older and young seropositive groups. Depressive symptomology was significantly correlated with NP measures of psychomotor speed, NPZ8 scores, NPZ6 scores, and Global Deficit Scores (GDS). Multivariate analyses controlling for age, education, estimated full scale IQ, and CD4 counts demonstrated that BDI scores were still significantly associated with lower NP scores. When the BDI was broken down into its subscore components of anhedonia/inhibition of activities, negative self-concept, somatic/vegetative features; multivariate analyses revealed that the anhedonia/inhibition component was most significantly related to neuropsychological impairment. **Conclusions:** Depressive symptomology is correlated with decreased neurocognitive functioning. Underlying mechanisms are unclear but do not appear to be related to IQ, education, or age.

The Age of a Mentor as an Important Factor in the Big Brothers/Big Sisters Program

Joshua Silva

Faculty: Winnie Mesiona-Lee, MD (Imi Ho'ola Program/Department of Pediatrics, JABSOM)

This research project evaluated the age of a mentor as a factor in achieving positive results in the lives of children they mentored. It was conducted at Kuhio Elementary School through the Big Brother/Big Sister site based mentoring program. Surveys were administered to the mentors after 8 months of mentoring asking them to evaluate their child's progress in specific areas. Results were divided into mentors in high school and those in college/graduate/medical school. It was found that children mentored by mentors in college/graduate/medical school had showed greater improvement in behavior than their counterparts who were mentored by high school students.

Grandparents Raising Grandchildren On The Wai'anae Coast: Challenges Facing Both Generations

Courtney Takahashi, Daniel Cheng

Faculty: AHEC at the Wainane Coast Comprehensive Health Center, Steven Bradley, MD

The Census 2000 brief shows that 2.5 million or 1% of grandparents are the primary caretakers of their grandchildren. On the Wai'anae Coast, 3000 grandparents, 7% of the population raises their grandchildren. Many grandparents have difficulty raising children on the fixed incomes and tend to suffer from age related conditions that make child rearing difficult. Children raised by grandparents suffer from diseases, including fetal alcohol syndrome, attention deficit hyperactivity disorder and asthma at higher rates as well. The children also develop many psychological problems, including feelings of abandonment by the parents. Thus, the objective of this project is to increase awareness about the prevalence of grandparents raising grandchildren and to highlight the unique challenges that face both generations. The authors of this project created a resource

book, community presentation, and website to increase the public's consciousness of this problem. Both the community presentation and website are directed at increasing awareness among health care professionals and academics in particular. The presentation and website were initially well received by health care professionals and community representatives but need more time to gauge their true effectiveness in raising awareness. The future plans for this project include educating community representatives, especially in Wai'anae, about the utility of the site so it can be accessed by more grandparents and the public in general.

Connecting with Community in Support of Lana'i Rural Health and Well-being: A Quentin Burdick Rural Health Interdisciplinary Program, 2006

Nathan Tokuda

Faculty: Len Fabrao-Wong, RN; Jane Kadohiro, DrPH; and Jan Shoultz, DrPH. (Quentin Burdick Rural Health Training Program)

The island of Lana'i is very rural, with nearly all 3000 residents living in peaceful Lana'i City. Once known as the "Pineapple Island" because it was once world's largest pineapple plantation, the economy switched over to luxury tourism in the early 1990s. The two hotels, the Four Season's Lodge at Ko'ele and the Four Season's at Manele Bay, employ about 60% of the population. There are many health and social problems in Lana'i stemming from the scarcity of community resources, isolation, low wages, rising housing prices, and a high percentage of transient residents. From June 12 to July 21, 2006, I was part of the first Quentin N. Burdick Rural Health Interdisciplinary Team to Lana'i. Living in the community for six weeks with a graduate student from the School of Social Work, we connected with community leaders and members to understand the community health needs. We were able to support several health needs in ways that would be sustainable after we left Lana'i. Projects: Ke Ola Hou O Lana'i, Na Pu'uwai Native Hawaiian Health System's office on Lana'i, provides various health services the native Hawaiians. We helped with the Kupuna Health, Cancer, and Cardiovascular Risk Factor Screenings by facilitating the completion of surveys and exit interviews. Organizational techniques were also shared with Ke Ola Hou staff to streamline future screening preparation. The Diabetes Coalition of Lana'i asked us to create a survey that would help the Coalition to determine the general knowledge of diabetes in the community. As a start, 60 surveys were completed during the annual Relay for Life. At the request of a community leader and with the help of Ke Ola Hou staff, we came up with a nutrition game to be held at the Relay for Life to teach children about proper nutrition. Participants placed food models into their correct positions in a three-dimensional food pyramid. Finally, a group of community leaders requested a community assessment to determine the health of the island residents in response to the rapid societal changes that have occurred over the past decade. After Collaborating with the leaders and Dr. Matsuoka, who completed a community assessment in the 1980's, we put together an assessment proposal with the following questions to be asked of Lana'i residents: name 10 things that you love about Lana'i, and 10 things that you would like to see changed. This proposal is now the community's tool to have an assessment completed. Overall, we were able to gain the trust of the community and follow through

with the community requests. We also forged strong relationships with community members. Our project would not have been successful without the help of Ke Ola Hou O Lana'i, Malama Pono O Lana'i, and Lana'i High School and Elementary, and various individuals.

Assessing the Effect of Tobacco Intervention Training on the Number of Smoker Identification in a Pediatric Outpatient Clinic

Victoria Tran

Faculty: Meta Lee, MD (Department of Pediatrics, JABSOM)

Lung cancer is the leading cause of cancer deaths for both men and women in the United States, with smoking as its primary cause. Second-hand exposure to smoke, or environmental tobacco smoke (ETS), has also been classified as a known cause of cancer, and is especially harmful to children, responsible for many lower respiratory tract infections as well as aggravating asthma. While cigarette smoking is the most preventable cause of morbidity and mortality, most begin smoking before the age of 18. Primary care physicians, particularly pediatricians, can play a major role in preventing and reducing risky behaviors, such as tobacco use, with effective screening and counseling. Additionally, counseling can be provided to parents to prevent exposure to smoke in children. In 2001, the PEDS Tobacco Initiative implemented a smoking cessation counseling curriculum to the Pediatrics Residency program at the University of Hawaii to improve tobacco intervention practices among their residents. In February 2005, residents working at the Pediatric Outpatient Clinic were given such training in order to increase smoker identification, and consequently smoking cessation counseling. Charts were also standardized to ensure smoking and smoking exposure identification. Charts were reviewed 3 months prior to training and 6 months after training began to assess the number of smokers identified. Ancillary visits were omitted. The first 3 business days of each month were reviewed, and visits in which smoking/smoking exposure were identified were given a "1" while those not identified were given a "0." Smoking/smoking exposure identification is expected to increase from 25% to 50%, if not more. Currently, data is still being collected and results are pending.

Houselessness on Oahu's Leeward Coast

Justin Yamanuha

Faculty: AHEC at Waianae Coast Comprehensive Health Center, Steven Bradley, MD

In the days before the arrival of Captain James Cook in 1778, the Hawaiian people took care of their land, cared for all members of their families and worked for the benefit of the group. As other Westerners, including American Protestant Christian missionaries began moving to the Hawaiian Islands, they brought with them the English language, the Christian religion and diseases to which the Hawaiians had no immunity. The decision to grow sugar in Hawaii to be sold on the world market required hard-working, cheap laborers. Because the number of Hawaiians had declined in Hawaii, laborers were brought in from countries around the world. The rapid pace of change, paired with the introduction of a monetary system and capitalistic economic system revolutionized the values of the Hawaiians towards a self before group ideal. These changes, along with the rising costs of affordable housing and low-paying jobs have left many who have been

unable to find permanent residences, people who have become houseless. The definition of houselessness is more than just the absence of a place of residence. This term is distinguished from homelessness, which implies that an individual does not have a place to which he/she identifies and can call "home." This project on houselessness was inspired by a young woman who is residing on a beach park on Oahu's leeward coast, without a house, but not without a place she calls home. She could have chosen to set up her tent on another part of the island, but ties to her family and her home community, keep her in the area. As she has struggled with finding housing and a fair-paying job, this young woman had her children removed by Child Protective Services (CPS) because of an unstable home environment. This project was undertaken to help this patient develop a strategy to regain her children from CPS custody, and provide a roadmap for others who may happen upon similar circumstances.

The Difference is Aloha

Justin Young

Faculty: Rebecca Smith, Kenton Kramer, PhD, Jan Shoultz, RN, DrPH (Quentin Burdick Rural Health Training Program)

The Waimea team composed of three team members, Justin Young second year medical student, Lehua Choy graduate student working on her Masters in Public Health, and Paul Pilago undergraduate student in Nursing. All projects and activities were chosen democratically and to help meet each students professional goal. During our stay we had the honor to participate in variety of community based activities. The Waimea Neighborhood Center, Kauai Care home, Hoola Lahui, Boys and Girls Club, and the YWCA's Girlz Zone are some of the places that we assisted. We tried our best to help of as many different organizations as we could in Waimea. Each project allowed brought us closer to the community. It has been our privileged to work with people of the west side of Kauai. Clearly if they had taught us one lesson during our stay there, the lesson would be that the Aloha Spirit is still alive and true. Let us never forget why Hawaii is unique to this world. Truly the difference is aloha.