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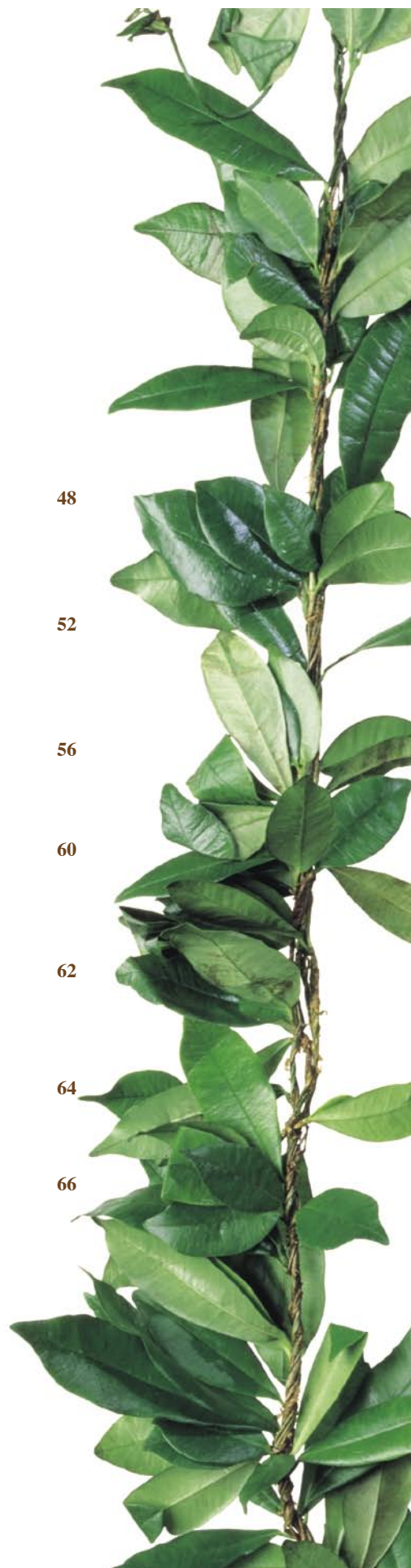
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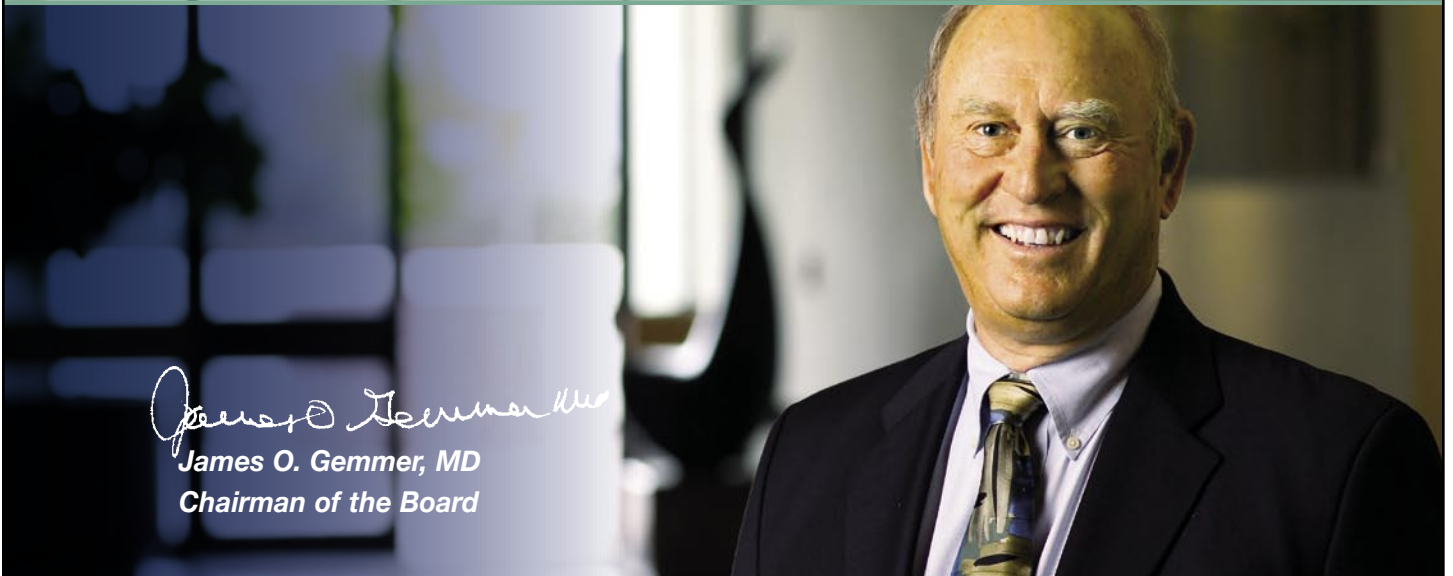
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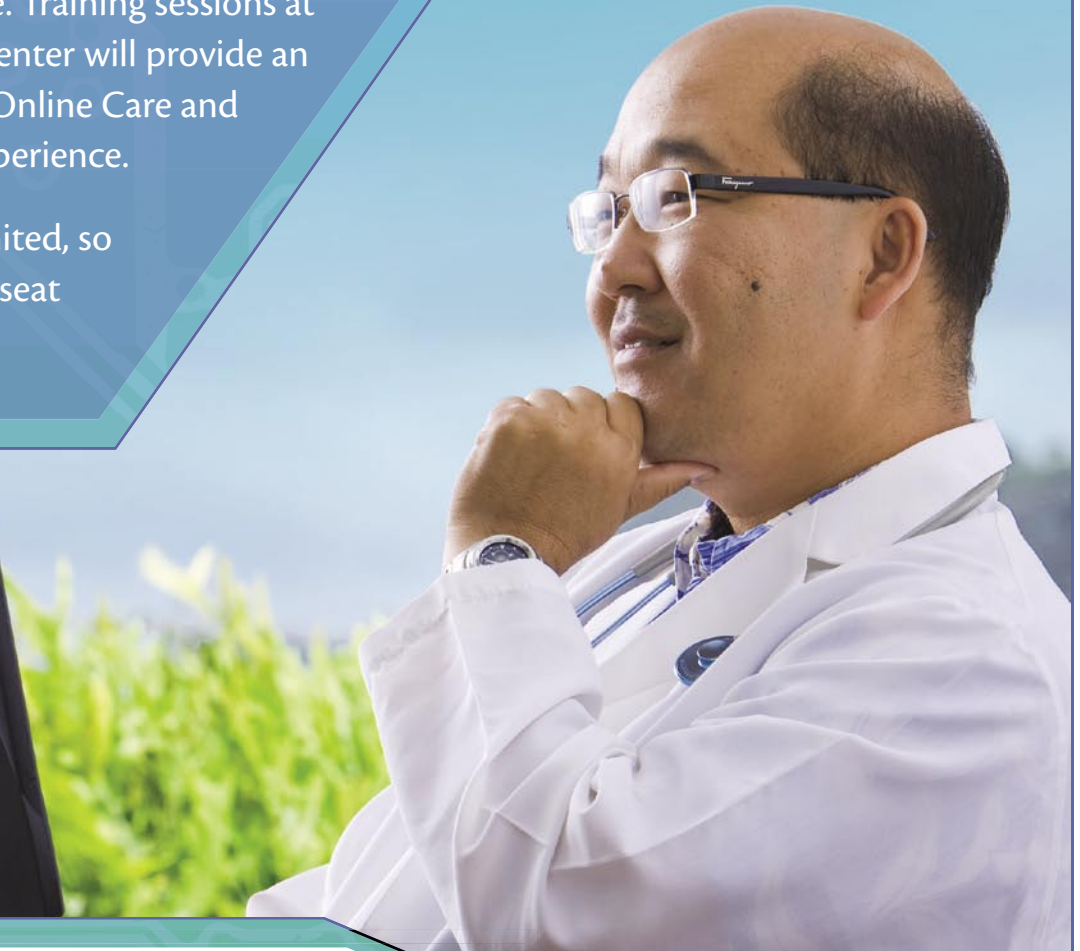
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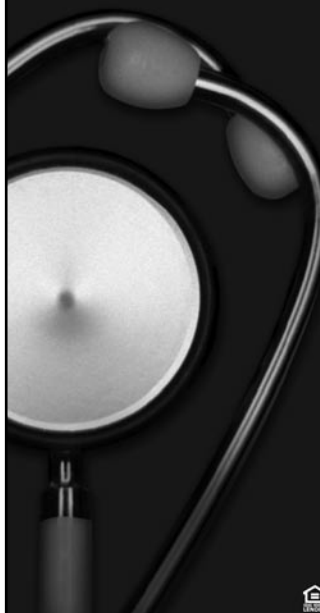
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Preferred Smoking Cessation Methods for Asian or Pacific Islander Household Smokers Who Live with Hospitalized Children

Meta T. Lee MD, MEd; Jennifer Bracamontes BA; Evan Mosier BS; James Davis PhD; and Jay E. Maddock PhD

Abstract

Introduction: A qualitative study was conducted to determine preferred smoking cessation methods among Asian or Pacific Islander (API) smokers who live with hospitalized children. This study occurred in a children's hospital where a new cessation program would be developed.

Methods: Twenty-six API smokers who live with children admitted to the hospital were interviewed and tape-recorded. Responses to survey questions were transcribed, categorized, and analyzed.

Results: 73% were interested in quitting, 34% within the next 30 days. Few would independently use the quit-line (31%) or attend group classes (4%). However, if offered during their child's hospitalization, 52% would sign up for individualized counseling and 29% would attend group sessions. Respondents believed advice would be helpful from their physician (71%), child's pediatrician (65%), nurse (64%), respiratory therapist (65%), or smoking cessation counselor (75%).

Conclusions: The majority of API smokers were interested in quitting and receptive to one-on-one counseling. Advice would be helpful from any healthcare professional.

Introduction

Environmental tobacco smoke (ETS) exposure, created by smokers living in households with children, imposes a significant burden on child health and wellness. Tobacco smoke has been identified as a Class A Carcinogen, containing greater than 4000 chemical toxins or intoxicants that contribute to significant illness and disease.¹ It is well established that children who live in households with smokers, compared to children who live in smoke-free homes, suffer more asthma, upper and lower respiratory tract infections, middle-ear disease, pneumonia, and other serious bacterial infections.^{2,3} Additionally, studies link ETS to Sudden Infant Death syndrome, low birth weight, spontaneous abortions, as well as adverse neurodevelopmental and behavioral effects.^{2,4}

Although the smoking prevalence in Hawai'i is down to 15.4%,⁵ smoking among Asian and Pacific Islanders (API) is disproportionately high at 21% for Native Hawaiians, 30% for Pacific Islanders, and 18% for Filipinos.⁵ Of special concern is data suggesting that 50% of Hawai'i's children are exposed to daily household smoke and only 13% of households with smokers have rules banning smoking inside the home.⁵ In addition, young adult smokers (ages 18-35), who best represent the subpopulation of parent smokers who put young children at risk for serious illness, have the highest rates of smoking at 19-21%.⁵ Despite the high smoking prevalence, it should be noted that this subpopulation is more likely to try quitting and to be successful than older, more established smokers.^{6,7}

While it is estimated that 60-85% of young adult smokers make serious attempts to quit smoking each year, the vast majority do so without counseling or pharmacologic aid.^{6,7} In fact, national surveys suggest that among smokers who attempt to quit, only 10-40% used behavioral interventions such as group, individual, or telephone counseling.^{7,8} Although these surveys do not subcategorize young adult smokers into parent smokers, studies specifically targeting

parent smokers report that the majority would accept enrollment into counseling programs offered during their child's health care visits.⁹⁻¹⁴ Although the long-term effectiveness of such interventions has not been well established, these findings suggest that a hospitalization could serve as an opportune time to help parents quit smoking.

Of the limited number of studies that have been done in this setting, the newborn nursery and the inpatient pediatric units have been identified as sites where parent smokers have enrolled and subsequently been able to successfully complete a smoking cessation program.^{10,11,14} A hospitalization represents a unique intervention opportunity to reach adult smokers. Adults who are in the hospital for either the birth of their child or for an illness are an ideal target group for smoking cessation interventions. Having a hospitalized child can represent a teachable moment for the adult smoker, which may make them more ready to attempt to quit. In addition, adult smokers are a captive audience, and often have long periods of down time when their child is sleeping or otherwise engaged. In this regard, the hospital serves as an opportune site where a smoking cessation intervention could be easily delivered.

To help eliminate ETS among Hawai'i's children, we sought to develop a hospital-based smoking cessation program for parent smokers at a tertiary care children's hospital in Hawai'i. Serving as the only pediatric referral center for Hawai'i and the Pacific Basin, this hospital services a significant number of sick children, predominantly of Asian and Pacific Islander descent. Because the studies described above reflect responses from predominantly Caucasian populations, it is not known if API in Hawai'i would have similar attitudes and preferred smoking cessation methods. Hence, to improve likelihood of success for our hospital-based program, a qualitative study was conducted to determine smoking attitudes and cessation needs of API smokers in this hospital setting.

Methods

Study Population

This study took place at a children's tertiary care hospital that services pregnant women, newborns, and children. It is the only children's hospital in Hawai'i and is a referral center for the State of Hawai'i and the Pacific Basin. This study targeted adult smokers that live with children admitted to this hospital, because this would be the site for implementation of a new smoking cessation program. Smokers were offered participation if they were greater than 18 years old, current smokers, and living in a household with a child or newborn at the time of data collection. Smokers were excluded if they were not of Asian or Pacific Islander ethnicity, did not speak English, were 17 years old or younger, did not live with the hospitalized child, or refused to sign consent.

Recruitment

Approval was obtained from the hospital Institutional Review Board prior to implementation. We used the Electronic Medical Record

database to identify all smokers admitted to the hospital. As part of routine care, all triage nurses complete a section on the top portion of the medical record documenting adult household smoking status. Each day during the study period, our project personnel created a list of all rooms with positive smoking status and visited these rooms on random days of the month to offer participation in our study.

Two interviewers with experience in public health and tobacco prevention were trained to interview program participants according to a standardized study protocol. Interviewers visited each pre-identified hospital room, announced that a study was being conducted to learn about smoking cessation needs of adult smokers who live with children, and offered voluntary participation. Interviewers determined if participants met the inclusion criteria described above. Participants were asked if they would answer survey questions and allow the interviewer to tape record the interview. Interviewers explained that the purpose of tape recording was to verify the accuracy of information recorded by interviewers. All subjects were told that their participation or refusal to participate would not affect the healthcare provided to their child. Participants who met inclusion criteria and agreed to voluntarily participate were offered a \$10 gift certificate to a local vendor as incentive and compensation for their time. Interviews lasted an average of 15-30 minutes per session; this time was spent solely on completing each questionnaire. Interviewers obtained consent to participate and entered interview information onto a standardized survey.

Study Design

A qualitative study design was used where trained interviewers completed one-on-one interviews with smokers in our target population. Responses were entered onto a standardized survey questionnaire, as well as recorded and transcribed. Items from our survey questionnaire were based on previously validated measures¹⁵ which were tailored to be culturally appropriate for our population and setting. There were 8 categories of questions asked: current smoking habits, previous quit attempts, triggers, barriers, cessation strategies, readiness to quit, home environment, and preferred resources in a hospital setting. There were 45 questions in total. Recruitment continued until consistent themes emerged during the interviews. All recorded responses were reviewed and grouped into categories based on responses. Two independent investigators assigned all responses into categories and compared groupings until 100% consensus was achieved. Frequency of themes was determined, and quotes that best captured these opinions were selected.

Results

Demographics

A total of 26 parent smokers participated in this study (response rate = 100% of all API smokers asked). All participants were either of Asian or Pacific Islander ethnicity. Fifteen (58%) were women; the mean age was 28 years. Mean years of smoking was 11.3, mean age of first cigarette smoked was 15.1, and 73% had made at least one prior quit attempt. Fifty percent of smokers were parents of newborns just delivered; the remainder represented parents of children admitted to the inpatient pediatric ward.

Attitudes About Smoking

Smokers identified stress (46%), boredom (15%), and contact with

other smokers (27%) as the most significant triggers for smoking. 73% of respondents were interested in quitting, with only 34% willing to quit within the next 30 days. Factors most helpful to quitting included: family encouragement (24%), avoiding other smokers (24%), and having the right mental attitude (16%). When asked about reasons for failed quit attempts or relapse, smokers attributed stress (38.5%), exposure (15.4%), and cravings/habit (7.7%).

A characteristic response to the top reason for smoking was, "The stress is there, and I smoke to relieve the stress. I would have to find something to replace the habit when stressed." Many smokers also identified living, working, and socializing with other smokers as a trigger for smoking, as well as a barrier to quitting. Representative attitudes included: "the hardest part to quit smoking is that everyone else I know smokes," and "it's hard to be around other people that smoke."

Preferred Cessation Methods

Smokers ready to quit in the next 30 days would use the following cessation methods: nicotine replacement therapy (NRT, 69%), oral medication (42%), the tobacco quit-line (31%), or group cessation classes (4%). If offered during their child's hospitalization, 52% would attend one-on-one counseling while only 29% would attend group sessions. Participants would find advice helpful from: their own physician (71%), their child's pediatrician (65%), a nurse (64%), a respiratory therapist (65%), or a smoking cessation counselor (75%).

Common themes were identified when discussing quitting and motivators for quitting. Many smokers wanted to quit in order to improve the health of their children. Statements included: "my daughter likes to copy it – smoking a cigarette...when she tries to do it, we take it away from her," "my kids always want me to quit," and "they learned a lot about [smoking] in school, and they don't like [my smoking]." Regarding preferred cessation methods, smokers who preferred one-on-one interventions felt, "if it were here [in my hospital room] I wouldn't have to go anywhere, and it would be easy. I'm here for some time, so if I can stay in my room or go down the hall, it would be convenient." Few commented on the use of the tobacco quit line, while those that did stated, "it doesn't help at all, it doesn't help me."

Discussion

This study was conducted to determine smoking cessation preferences among API parent smokers in a hospital-based setting. Our qualitative findings describe attitudes about smoking and quitting so that a smoking cessation program could be developed that best addressed the needs of this important target population. In addition, findings from our study allowed for comparisons to be made between our local API population and other findings in the literature. Our findings suggest that in our unique setting, over half of parent and household smokers who are ready to quit would participate in a hospital-based smoking cessation program if offered. Our study also suggests that one-on-one counseling during their child's hospitalization would be the preferred smoking cessation program to offer.

This study is unique in that it specifically targets API smokers who are either parents or live in households with children. This represents an important demographic group that has not been well studied, and one that exposes Hawai'i's children to significant morbidity through

daily second hand smoke exposure. As mentioned previously, APIs represent a group with disproportionately high smoking rates in Hawai'i: 21% for Native Hawaiians, 30% for Pacific Islanders, and 18% for Filipinos.⁵ Furthermore, our hospital-based population of parent and household smokers represents a significant subpopulation that imposes serious risk for adverse health effects to Hawai'i's most vulnerable children: infants who have just been born, or children who are so acutely ill that they require hospitalization.

A limited number of studies have been reported that describe attitudes and cessation preferences among smokers who live in households with children. While some may argue that a stressful hospital environment may not be an ideal time to offer parents participation in a smoking cessation program, surveys have reported acceptability rates as high as 56-94% for parents to enroll in a smoking cessation program if offered by their child's physician in the outpatient clinic, hospital, newborn nursery, or emergency room.^{9,10,13,14} Our study similarly reports a high acceptability rate of 52%, and even further describes that smokers in our target population would find advice helpful not only from their own physician (71%), but their child's pediatrician (65%), a nurse (64%), a respiratory therapist (65%), or a smoking cessation counselor (75%).

Of note, only a small proportion of API respondents in our study reported that they would independently use a telephone quit line program (31%) or be willing to participate in group cessation classes (4%). Interestingly, in a recent national survey, with greater than 75% Caucasian respondents, 64% of parent smokers said that they would accept enrollment in a telephone cessation program if offered by their child's pediatrician.¹⁶ It should be noted that the national average for quit line usage in the United States was 2.8%, with only 6% of all Hawai'i smokers using the quit line during the year 2007, when this study took place.¹⁷ Interestingly, 29% of our population would be interested in using the quit line if offered during their child's hospitalization.

While one could speculate that differences in acceptability and usage rates could be attributable to differences in ethnicity, geographic location, and culture. Determining these causes is beyond the scope of this study. However, there were many common opinions that provided insight to reasons for wanting to quit smoking and preferred methods for quitting. Several participants commented, "My kids want me to quit. They hear about it in school...and don't like [my smoking]." A few also described being bothered when their children "copy the motion of smoking." Many participants from our target population reported, "I want to quit for my children" but smoke or have difficulty quitting because "the stress is there, I smoke to relieve the stress. I would need to find something to replace the habit when stressed." Other representative statements included, "it's hard to be around others that smoke," "being able to talk to people would help me quit smoking," and "if it were here [in my hospital room] I wouldn't have to go anywhere, and it would be easy...it would be convenient."

The effectiveness of hospital-based smoking cessation interventions has been reported to result in long-term quit rates as high as 60-70% among adult hospitalized patients.^{18,19} However, it should be noted that a recent Cochrane review concluded that brief interventions that have been identified as successful for adult interventions cannot be extrapolated to adults as parents in child health care settings.²⁰ Our qualitative findings suggest that smokers that are

parents have a unique motivation to want to quit; the health of their children. In addition, it would not be unreasonable to speculate that being a caretaker or provider for a child creates a unique stress that smokers without children do not have. These factors support the idea that parent smokers are a unique subgroup of adult smokers whose cessation preferences and potential for success with quitting may differ from the general adult population.

Currently, the long-term effectiveness of interventions aimed at reducing household second hand smoke exposure has not been well established. A recent Cochrane review identified at least four studies that provided evidence for the effectiveness of intensive counseling offered to parent smokers in the clinical setting.²⁰ Although randomized, controlled intervention studies are lacking, our feasibility study is consistent with findings reported by others in the literature; parent smokers are interested and willing to receive help from a health care professional if offered during their child's hospitalization. Finally, it should be remembered that young adult smokers are not only more likely to attempt quitting, but more likely to be successful in quitting.^{6,7} Hence, pediatricians and other child health care professionals should be encouraged to routinely offer cessation support to parent and household smokers of their patients.

This study has several limitations. We recognize that a small sample size was used; however, the purpose for this study was to learn through qualitative analysis what smokers in our target population believed would best help them quit. Although we could have interviewed more participants, limiting our data to twenty-six respondents was felt to be adequate to establish common themes among those surveyed.

This study was also limited because the actual breakdown of Asian and Pacific Islander ethnicities was not captured. Although it may have been helpful to break down our participant demographics by specific Asian or Pacific Islander ethnic groups, our sample size was intentionally small; hence the number of participants representing each ethnic group would have been even smaller. Furthermore, many of the studies we reviewed only described ethnicity by Caucasian, non-Caucasian, or Asians. Hence, for comparison purposes, further sub-classification of ethnicity would not have been necessary or useful.

Finally, this study occurred in only one hospital setting, based in the Pacific Ocean, yet uniquely still a part of the United States. Hence, attitudes and beliefs from our API population may not represent cultural attitudes or opinions of parent smokers of API descent on the mainland US, Asia, or even from countries represented in the Pacific Islands. However, this study does add to the literature unique insight about API smokers who care for and live with the most vulnerable and sickest children in Hawai'i and the Pacific Basin. Future studies should be directed at measuring the effectiveness of interventions that reduce second hand smoke exposure for this vulnerable population.

Conclusion

In summary, our findings suggest that most API smokers who are ready to quit would be amenable to enrolling in a hospital-based smoking cessation program if offered during their child's hospitalization. Parent and household smokers who live with children represent a unique subpopulation of the adult smoking population. Differences in preference for quitting may exist between our API

parent smoking population and the general US population. Despite differences, all pediatric health care professionals should be encouraged to routinely and emphatically offer participation to parent smokers during their child's health care visit.

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No conflicts of interest.

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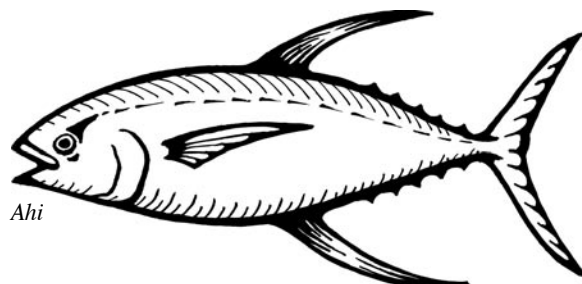
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The Werner's Syndrome RecQ Helicase/Exonuclease at the Nexus of Cancer and Aging

Stephen G. Chun MD; David S. Shaeffer MD; and Peter K. Bryant-Greenwood MD, MBA

Abstract

Werner's Syndrome (WS) or adult-onset progeria is an autosomal recessive disorder of accelerated aging caused by mutations of the DNA RecQ helicase/exonuclease (WRN). WRN is an ATP-dependent helicase with 3' to 5' DNA exonuclease activity that regulates the replicative potential of dividing cells, and WRN loss-of-function mutations promote cellular senescence and neoplastic transformation. These molecular findings translate clinically into adult-onset progeria manifested by premature hair graying, dermal atrophy, cardiovascular disease, and cancer predilection along with a markedly reduced life expectancy. Recently, a patient with WS who developed pancreatic adenocarcinoma was identified in Honolulu suggesting a significant prevalence of loss-of-function WRN mutations in Hawai'i's Japanese-American population. Based upon the indigenous Japanese WRN loss-of-function mutation heterozygote rate of 6 per 1,000, we speculate the possibility of approximately 1,200 heterozygotes in Hawai'i. Our ongoing studies aim to evaluate Hawai'i's true allelic prevalence of WRN loss-of-function mutations in the Japanese-American population, and the role of WRN silencing in sporadic cancers. In summary, WRN plays a nexus-like role in the complex interplay of cellular events that regulate aging, and analysis of WRN polymorphisms in Hawai'i's population will generate novel insights to advance care for age-related pathologies.

Background

In 1904, the medical student Otto Werner described adult-onset progeria as a genetic disorder inherited in a Mendelian autosomal recessive fashion that is manifested by features of pathologic aging. Werner reported patients in his doctoral thesis who developed changes that mimicked "accelerated aging" at puberty, causing them to appear grossly older than their stated age by the second decade of life. These findings included premature hair graying, skin and subcutaneous fat atrophy, and classic "bird-like" facies.¹ This pathologic aging was accompanied by premature cardiovascular and cancer-related mortality resulting in a markedly reduced life expectancy. Since the initial description of Werner's Syndrome (WS), less than 1,500 cases of WS have been reported to date.²

With the advent of modern molecular biology, WRN was identified in the early 1990's as the gene involved in WS through positional cloning,³ and mutant forms of WRN as well as WRN siRNA knock-down have been demonstrated to reduce the replicative potential of cells in mammalian models.⁴ Further characterization of WRN revealed that it encodes a 165 kDa conserved DNA RecQ helicase located on chromosome 8p12, possessing both a helicase domain and 3' to 5' DNA exonuclease domain (Figure 1). Thus, wild-type

WRN is considered to be a "caretaker of the genome," that protects genomic integrity, maintains telomere length, and prevents chromosomal aberrations, by promoting cell cycle progression and acting as a DNA repair enzyme.⁵ Epigenetic silencing of WRN expression through CpG-promoter methylation has recently been implicated as a cellular mechanism of aging and tumorigenesis,⁶ suggesting that WRN serves a nexus-like function at the complex interplay of cellular events regulating aging and neoplastic transformation.^{7,8}

Cases of WS have important implications for Hawai'i's population as WS has been recognized in Honolulu, Hawai'i. Recently, Chun et al. (2010) reported a case of WS associated with metastatic pancreatic adenocarcinoma in a 5th generation Japanese-American man from Hawai'i, and has proposed that WS represents a novel hereditary pancreatic cancer predisposition syndrome.^{9,10} Given the real possibility of other cases as well and the potential presence of more than 1,200 heterozygotes carrying loss-of-function mutations of WRN in Hawai'i, we provide a review of WS including pertinent clinical findings, population genetics, therapeutic approach, and translational insights gained from this fascinating genetic condition.

Clinical Findings and Diagnosis

Like Hutchinson-Gilford Syndrome, xeroderma pigmentosum, and Cockayne's Syndrome, WS is classified as a segmental progeria in that it resembles some, but not all aspects of aging.¹¹ Unlike other progeroid syndromes, WS is not clinically apparent during childhood and infancy, and is therefore defined as an adult-onset progeria. The first signs of WS occur during adolescence with the absence of growth spurt at puberty. Subsequently, afflicted individuals develop premature graying of the hair and begin to appear decades older than their stated age by their second decade of life with the development classic "bird-like" facies due to subcutaneous fat atrophy (Figure 2).^{1,2} Along with the gross appearance of accelerated aging, patients acquire age-associated morbidities including type II diabetes mellitus, bilateral cataracts, cardiovascular disease, osteoporosis, and dermal atrophy. On physical examination, voice changes that are characterized as hoarse and high-pitched are observed in WS that are similar to the voice changes occurring in the geriatric population. These classic findings have led to the proposal of clinical diagnostic criteria by the Werner International Registry in order to select appropriate patients for further genetic testing (Table 1).² While a diagnosis of WS may be made clinically, confirmatory genetic

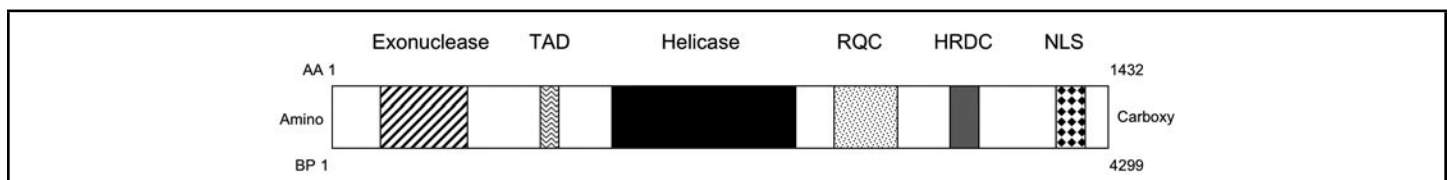


Figure 1. Functional domains of the the Werner's Syndrome WRN RecQ helicase/exonuclease. HRDC, helicase RNase D C-terminus domain; NLS, nuclear localization sequence; RQC, RecQ conserved domain; TAD, transactivation domain.



Figure 2. Patients with Werner's Syndrome classically develop pathologic aging and "bird-like facies" with onset during the 2nd decade of life. Images reproduced with permission from Chun, et al.: *Gastrointest Cancer Res* 4: xx-xx (in press); © 2011 by International Society of Gastrointestinal Oncology.

Table 1. The clinical manifestations and diagnostic criteria for Werner's Syndrome adapted from the International Registry of Werner Syndrome.

Major Criteria	Minor Criteria	Diagnostic Criteria
Bilateral cataracts	Diabetes Mellitus	Definite: All Major + 2 Minor
Dermatologic pathology (atrophy, tight skin, ulceration bird-like facies, hyperkeratosis, subcutaneous atrophy)	Hypogonadism	Probable: First 3 Major + Any 2 additional
Short stature	Osteoporosis	Possible: Either 1 st two Major + Any 4 other
Parental consanguinity or affected sibling	Osteosclerosis (radiographic finding)	Exclusion: Onset before adolescence
Premature hair graying or thinning	Soft Tissue Calcification	
Premature hair graying or thinning	Premature Atherosclerosis	
Positive 24-hour urine hyaluronic acid test	Cancer (Rare, Mesenchymal, Multiple)	
	Voice changes (Hoarse/High Pitched)	
	Flat Feet	

analyses for WRN loss-of-function mutations are available from the Werner International Registry using polymerase chain reaction based gene analysis and immunologic protein assays.²

The average life expectancy is reduced to 45-47 years in WS due to the development of early cancer and cardiovascular disease.¹² Myocardial infarctions and cerebrovascular accidents are frequently reported as a cause of morbidity and mortality in patients with WS.¹³ While a number of malignancies including colorectal, skin, thyroid, and pancreatic cancers have been reported to occur in association with WS, soft tissue sarcomas have a particularly high incidence in WS.^{14,15} As WRN primarily plays a role in cell cycle progression and the genomic integrity of dividing cells, non-dividing tissues are thought to be spared in WS. Therefore, dementias such as Alzheimer's Disease are not observed in WS, and histologic analysis of neuronal tissue reveals the absence of atrophic changes.^{9,10}

The accelerated development of multiple age-associated pathologies caused by the loss-of-function of a single gene makes WS an attractive model system to study cancer, cardiovascular disease, and senescence. While WS is rare, ongoing efforts seek to document new cases through the Werner International Registry at the University of Washington as further study of WS has potential to generate insight for the purpose of formulating novel interventions to advance care for age-related pathologies.

Population Genetics

WS is a rare autosomal recessive disorder caused by homozygous loss-of-function mutations of the WRN RecQ helicase, and less than 1,500 cases of WS have been reported since its initial characterization in 1904. In the general population, the rate of heterozygous loss-of-function mutations is approximately one per million. However,

the indigenous ethnic Japanese population carries a much higher heterozygote rate and over 75% of all cases of WS have occurred in ethnic Japanese.^{15,16} Analysis of the most common WRN loss-of-function mutations in 1,000 random healthy ethnic Japanese from the southern prefecture of Kanagawa, Japan revealed a heterozygote rate for WRN loss-of-function mutations to be greater than 6 per 1,000.¹⁶ The high prevalence in Japan is attributed to multiple founder mutations in mountainous regions of Japan where geography has historically limited gene flow, thereby allowing amplification of mutant WRN alleles. A similar geographic situation is present in Hawai'i providing a potential geographic mechanism for amplification of mutant loss-of-function alleles from a founder effect suggested by the case reported by Chun et al (2010).⁹

Based upon epidemiologic data from Japan as well as the case reported by Chun et al (2010), we propose a significant prevalence of WRN loss-of-function mutations in Hawai'i's Japanese-American population. Given approximately 200,000 Japanese-Americans in Hawai'i (United States Census, 2000), the ethnic Japanese heterozygote rate of 6 per 1,000,¹⁶ and negligible contributions from other ethnic groups, we estimate the presence of 1,200 Japanese-Americans carrying heterozygous WRN loss-of-function mutations in Hawai'i. We also propose that the rate of WRN loss-of-function mutations in the southern prefecture of Kanagawa, Japan reported by Satoh *et al.* (1996) is applicable to Hawai'i's population, especially as the majority of Japanese who immigrated to Hawai'i originated from southern prefectures.¹⁷ Furthermore, for the majority of the 20th century the Japanese-Americans in Hawai'i have almost exclusively married within their ethnic group, providing another potential mechanism for amplification of WRN loss-of-function mutations within this population.¹⁸ Immigration has also been limited in this population due to the geographic isolation of Hawai'i coupled with the Asian Exclusion Act of 1924, effectively blocking gene flow into this population for the majority of the 20th century. The case reported by Chun et al (2010) of a 5th generation Japanese-American man who was a compound heterozygote with two different causative loss-of-function mutations confirms the presence of at least two founder effects in the late 1800's.⁹ Additional inquiry has revealed that other cases of WS have been observed in Hawai'i without genetic confirmation (personal correspondence with Dr. Lee Buenconsejo-Lum). While we estimate the presence of 1,200 Japanese-American individuals carrying heterozygous loss-of-function mutations in Hawai'i, factors including multiple founder effects, geographic isolation, and historical circumstances suggest that the true rate could be much higher.

A potentially high heterozygote prevalence rate in Hawai'i underlies the importance of recognizing the clinical manifestations of WS, and opens the door for population genetic studies of WRN loss-of-function mutations in Hawai'i. Similar to other DNA repair disorders such as ataxia telangiectasia, Lynch Syndrome (HNPCC), hereditary breast and ovarian cancer syndrome (BRCA2), and xeroderma pigmentosum that predispose tumorigenesis in heterozygotes,^{10,19-21} we hypothesize that heterozygous WRN loss-of-function mutations predispose cancer in Hawai'i's Japanese-American population. As the Japanese-American population of Hawai'i has the highest rate of cancer and cardiovascular disease among their ethnic cohorts worldwide,²² determination of the rate of WRN loss-of-function mutations of Japanese-Americans in Hawai'i will

help to address this cancer disparity by determining whether these mutations predispose tumorigenesis.

Therapeutic Approach

At present, there is no specific treatment for WS although gene therapy might be feasible in the future with further development of gene technologies. Treatment for WS is supportive although novel molecularly-targeted therapeutic approaches have recently been proposed.²³ Although an evidence-based approach to WS is precluded due to its rarity, its diagnosis potentially changes clinical management by changing pre-test probabilities for age-related pathologies. Early cardiovascular disease and cancer are a hallmark of WS, and we propose that any patient with WS should have screening for hyperlipidemia, breast cancer, colorectal cancer, cataracts, diabetes mellitus, hypothyroidism and osteoporosis from the 2nd decade of life regardless of clinical symptoms. The development of these morbidities should be treated aggressively both pharmacologically and through lifestyle modification.¹³ Additionally, given the Mendelian inheritance of WS, genetic testing of other family members at risk of developing WS may be considered. Chemotherapeutic toxicity has been reported in WS consistent with the cellular roles of WRN as a DNA repair enzyme, suggesting that patients are highly sensitive to the mutagenic effects of clastogenic agents.²⁴⁻²⁷ We suggest the judicious use of therapeutic radiation and reduced-dose chemotherapy at least initially to avoid complications in patients with WS who develop cancer. Surgical interventions should also be pursued cautiously as patients with WS have been reported to exhibit impaired wound healing, likely as a result of impaired fibroblast proliferation.^{28,29} Such impairment of fibroblast proliferation may also predispose patients with WS to anastomotic breakdown in gastrointestinal surgeries. In summary, while an evidence-based approach for WS is not possible, we suggest that genetic testing, early screening, and the use of translational insights gained from experimental models of WS may provide a reasonable clinical approach to WS on an ad hoc basis.

Discussion

It has been more than a century since the initial characterization of WS and it continues to provide us with a fascinating model system to investigate the genetic basis for aging, tumorigenesis, and cardiovascular disease. Multiple investigations are underway to interrogate and clarify the complex roles that WRN plays in the nexus of cellular events contributing to senescence and age-related pathologies. However, relatively little is known about the role that heterozygous loss-of-function mutations of WRN play in cancer predisposition in humans. Thus, the Japanese-American population of Hawai'i provides a novel source of translational data to understand the role of WRN in humans given the recent reports of a founder effect in Hawai'i,⁹ and the likelihood of a high rate of heterozygous loss-of-function mutations of Japanese-Americans in Hawai'i.

While WS is fascinating from the standpoint of genetics, pathology, and aging, it also provides us with valuable clinical lessons. Although WS is rare, it teaches us the importance of correlating the patient's age with their general appearance on physical examination. It is notable that the case reported by Chun et al. (2010) went undiagnosed until age 43, in spite of having obvious signs of pathologic aging and having seen multiple medical specialists upon numerous

admissions to the hospital.⁹ In this age of technology, sophisticated diagnostic and prognostic tests are now becoming increasingly available. However, the value of evaluating the general appearance of the patient on physical examination cannot be overstated.

The Japanese-American population in Hawai'i has long been recognized as having one of the highest rates of colorectal cancer in the world as well as significantly higher rates of other cancers compared to their other cohorts worldwide.²² Multiple studies have sought to address this cancer disparity in the Japanese-American population of Hawai'i by correlating this cancer predisposition with diet, obesity, and other lifestyle variables.¹⁸ Despite these attempts to understand the cancer predisposition of the Japanese-American population of Hawai'i, no definitive answer explaining this cancer disparity has been forthcoming. We hypothesize that Japanese-Americans in Hawai'i carrying heterozygous loss-of-function mutations of WRN may at least partially explain this cancer predisposition, especially as multiple DNA repair disorders such as Lynch Syndrome (HNPCC) similarly predispose tumorigenesis in heterozygotes.³⁰ Our ongoing studies will determine the true rate of WRN loss-of-function mutations in Hawai'i's Japanese-American population for the purpose of determining whether WRN gene analysis represents a feasible marker to screen for cancer risk in Japanese individuals.

The recent development of the biomedical infrastructure in Hawai'i will facilitate the analysis of WRN loss-of-function mutations in Hawai'i's population. Several serum, tissue, and DNA repositories have been established at the University of Hawai'i at Manoa through the John A. Burns School of Medicine and the Cancer Research Center of Hawai'i. The data generated from tissue banks and repositories correlated with clinicopathologic features of patients harboring WRN loss-of-function mutations will provide a valuable translational resource to advance knowledge of cancer epidemiology, mechanisms of oncogenesis, and the genetics of aging. Additionally, the establishment of a pancreatic cancer cell line from a patient with WS will serve as a novel translational tool to understand the milieu of cellular events surrounding the association of cancer and aging.⁹ Using these tools, we aim to further clarify the mechanistic role of WRN at the cellular level and translate these findings from bench-to-bedside into novel screening tools and interventions at the population level.

In summary, we provide a review of WS along with implications for Hawai'i's population in light of a recent case of WS reported by Chun et al (2010).⁹ Further study of WS and the WRN RecQ helicase will provide novel insight in order to develop screening and interventional strategies for aging and age-related pathologies. Given our estimates of more than 1,200 heterozygous individuals harboring loss-of-function mutations of WRN in Hawai'i's Japanese-American population, further study will be necessary to delineate whether these individuals embody a hereditary cancer predisposition. It has long been established that Japanese-Americans in Hawai'i have among the highest rates of colorectal and other types of cancers in the world, and analysis of WRN may provide answers to this phenomenon.

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Postpartum Follow-up Rates Before and After the Postpartum Follow-up Initiative at Queen Emma Clinic

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Abstract

Objective: To study postpartum follow-up rates, as well as counseling opportunities, among Queen Emma Clinic patients before and after the implementation of the Queen Emma Clinic Postpartum Follow-up Initiative.

Methods: This was a retrospective chart review of 221 women who received prenatal care at the Queen Emma Clinic and gave birth between April 2006 and April 2008. In April 2007 the postpartum initiative was started. The primary outcome was the number of postpartum follow-up visits. Secondary outcomes included breastfeeding, contraceptive use, depression screening and referral, follow-up screening for patients with gestational diabetes and subsequent pregnancy.

Results: Postpartum follow-up rates were significantly higher after the Postpartum Follow-up Initiative (86.1% compared with 71.7%, $P=.012$). When comparing timing of follow-up, the first postpartum visit occurred approximately one week sooner in the post intervention group (2.96 weeks compared with 3.73 weeks, $P=0.38$) with no difference in timing of the second postpartum visit (6.62 weeks compared with 6.42 weeks, $P=.72$). In the post intervention group there were more patients breastfeeding at the first postpartum visit (28.7% compared with 16%, $P=.015$), as well as the second postpartum visit (28.7% compared with 12.3%, $P=0.01$). There were also more women using contraception in the post intervention group (84.3% compared with 71.7%, $P=.009$). There was no difference in depression screening or referral, follow-up screening for gestational diabetes, or timing of subsequent pregnancies.

Conclusion: The Postpartum Follow-Up Initiative improved postpartum follow-up rates, as well as breastfeeding, and contraceptive use.

Introduction

The postpartum time period lasts from delivery of the placenta until six to eight weeks after delivery. While the postpartum period is uncomplicated for most women, approximately 3% of women who have a vaginal delivery and 9% of women who have a cesarean section will experience a complication that either requires prolonged hospitalization after delivery or readmission to the hospital.¹ Outpatient postpartum visits allow clinicians to address problems with bowel and bladder function, pain, and vaginal bleeding. They also allow clinicians to assess breastfeeding, postpartum depression, infant bonding, resumption of sexual intercourse, and contraception.²

While there is no specific research that has established the optimal timing for outpatient postpartum visits, early postpartum care by health care providers has been associated with reduced maternal and infant morbidity³ and improved patient satisfaction.⁴ However, women can experience several obstacles to complying with postpartum care. Transportation to and from a medical facility can be challenging. Childcare, particularly if a woman is caring for other children, can also present an obstacle. Thus, in many settings, compliance with postpartum visits is suboptimal.

This study compares postpartum follow-up rates before and after initiation of the Postpartum Follow-Up Initiative. This program was instituted at Queen Emma Clinics (QEC) in Honolulu,

Hawai'i on April 1, 2007 to increase compliance with postpartum care. The Postpartum Follow-Up Initiative was comprised of two main interventions. The first involved providing women with the time and date of their first postpartum appointment while the patient was still in the hospital. At this time, women received an appointment card as well as a congratulatory letter. If the entire in-patient postpartum course took place over the weekend when clinic staff was not available to schedule the first postpartum visit, the patient received a phone call or letter detailing the time and date of the first postpartum appointment. The second intervention took place at the patient's first and second postpartum visit. At the first postpartum visit, a picture was taken of the patient and her baby. This was then presented to the patient in a photo album with the hospital's logo when she returned for her second postpartum visit.

Methods

A retrospective chart review was performed at QEC in Honolulu, Hawai'i. QEC is located at Queens Medical Center, a non-profit, Joint Commission on Accreditation of Healthcare Organizations accredited acute care health facility which includes a labor and delivery suite. Ambulatory care services are provided at QEC by residents and University of Hawai'i faculty physicians. QEC serves a diverse population which includes both the insured and uninsured as well as underserved residents of Oahu who may have difficulty accessing health care due to socioeconomic factors and immigration status that precludes state sponsored healthcare coverage.

Patients were included in this study if they received prenatal care at QEC and gave birth between April 2006 and April 2008. Patients were divided into two groups, those who delivered before April 1, 2007, prior to implementation of the postpartum initiative, and those who delivered after April 1, 2007, after the initiative had been started. Exclusion criteria included patients with no prenatal care or those who received prenatal care outside of QEC.

Data was collected on demographics and the patient's obstetric course including age, insurance status, gravidity and parity, and mode of delivery. The primary outcome was the number of postpartum follow-up visits. Secondary outcomes included the timing of postpartum visits, breastfeeding, contraceptive use, depression screening and referral, postpartum glucose tolerance testing for patients with gestational diabetes, and the timing of subsequent pregnancy. The different contraceptives were grouped in order of effectiveness with sterilization and intrauterine devices falling in the "most effective" category, oral contraceptive pills, the contraceptive patch, the contraceptive ring, and depo medroxyprogesterone acetate falling in the "effective" category, and no method and barrier methods falling in the "least effective" category. The single rod contraceptive implant was not available during the time period studied.

Descriptive statistics were generated to compare demographic information using t-tests for continuous variables and chi-square tests for categorical variables. The primary outcome, postpartum

follow-up, was analyzed using a chi square test. Secondary outcomes were also analyzed using chi square tests. Multiple logistic regression and model building were performed to control for potential confounders.

Sample size calculations were based on an expected difference of 25% in postpartum follow-up rates before and after the initiative. To address this hypothesis, a total of 70 subjects in each arm of the study were needed to have 80 % power with a significance level of $p=0.05$. This study was approved by the Queens Medical Center Institutional Review Board.

Results

A total of 221 women met inclusion criteria, 106 in the pre-intervention group and 115 in the post-intervention group. The demographics for the study population are presented in Table 1. The pre-intervention and post-intervention groups were similar in terms of age, insurance status, gravidity and parity. Participants in both groups had a mean age of 26 years and the majority of patients both before and after the intervention had some form of health insurance.

Postpartum follow-up rates are presented in Table 2. Women were significantly more likely to follow-up in the postpartum period following implementation of the Postpartum Follow-up Initiative (86.1% compared with 71.7%, $P= 0.012$). Women were also more likely to come in for 2 postpartum visits following implementation of the initiative with 56.6% of subjects coming in for both postpartum visits following the initiative compared to 39.6% of subjects prior to the initiative.

When the timing of follow-up was compared, the first postpartum visit occurred approximately one week sooner in the post intervention group (2.96 weeks compared with 3.73 weeks, $P= 0.38$) with no difference in timing of the second postpartum visit (6.62 weeks compared with 6.42 weeks, $P= 0.72$). The proportion of subjects who followed up in a timely manner are presented in Table 3 with subjects being significantly more likely to follow-up within 3 weeks for their first visit and within 7 for their second postpartum visit following initiation of the Postpartum Follow-up Initiative.

Rates of breastfeeding, contraception use, depression screening and referral, postpartum glucose tolerance testing for patients with gestational diabetes, and timing of subsequent pregnancy are presented in Table 4. In the post intervention group there were more documented instances of breastfeeding at the first postpartum visit (28.7% compared with 16.0%, $P= .015$) and the second postpartum visit (28.7% compared with 12.3%, $P=0.01$). There were also more documented instances of patients using contraception in the post intervention group (84.3% compared with 71.7%, $P= 0.009$). There was no difference in depression screening or referral, glucose tolerance testing for gestational diabetes, or timing of subsequent pregnancies. Various confirmatory analyses including multiple logistic regression with the inclusion of potential demographic confounders did not change relationships.

Discussion

This study documents the implementation of an innovative, low-cost project to increase postpartum compliance in a population with traditionally low postpartum follow-up rates. Following implementation of the Postpartum Follow-Up Initiative, postpartum follow-up rates increased to 86.1% with 56.6% of subjects coming in for two postpartum

	Pre-intervention % (n)	Post-intervention % (n)	p value
Age	26.5 (106)	26.1 (115)	0.570
Gravidity			0.193
1	26.4 % (28)	28.7% (33)	
2-3	45.3% (48)	33.9% (39)	
4 or more	28.3 % (30)	37.4% (43)	
Parity			0.104
1	39.7% (41)	34.8% (40)	
2-3	45.3% (48)	37.4% (43)	
4 or more	16.0% (17)	27.8% (32)	
Insurance			0.365
Yes	89.6% (95)	93.0% (107)	
No	10.4% (11)	7.0% (8)	

# of follow-up visits	Pre-intervention % (n)	Post-intervention % (n)	p value
None	28.3% (30)	13.9% (16)	0.012
One	32.1 % (34)	29.6% (34)	
Two	39.6% (42)	56.6% (65)	

	Pre-intervention % (n)	Post-intervention % (n)	P value
Postpartum Visit 1			0.014
No follow-up	28.3% (30)	13.9% (16)	
Visit within 3 weeks	47.2% (50)	64.3% (74)	
Visit more than 3 weeks	24.5% (26)	21.7% (25)	
Postpartum Visit 2			0.025
No follow-up	60.4% (60)	44.3% (51)	
Visit within 7 weeks	34% (36)	41.7% (48)	
Visit more than 7 weeks	5.7% (6)	13.9% (16)	

visits compared to 39.6% prior to implementation. Higher rates of postpartum follow-up allowed for more opportunities to reinforce the importance of breastfeeding and provide contraception.

The first part of the initiative moved the responsibility of scheduling the first postpartum visit from the patient to clinic personnel. This took relatively little time for clinic personnel to accomplish and did not require them to work outside of scheduled clinic hours as patients who delivered and were discharged over a weekend or holiday received a letter or phone call during scheduled clinic hours. This practice alone decreased non-compliance with the first postpartum visit from 28.3% to 13.9%. The second portion of the initiative involved incentivizing care by giving patients a photo album with the mother and infant's picture. This practice decreased non-compliance with the second postpartum visit from 60.4% to 44.3%. Though very different in their approach, both practices improved postpartum follow-up rates to a similar degree.

Table 4. Rates of Breastfeeding, Contraceptive Use, Depression Referral, Screening for Diabetes and Timing of Subsequent Pregnancy Before and After Implementation of the Postpartum Follow-up Initiative

Outcome	Pre-intervention % (n)	Post-intervention % (n)	p value
Breastfeeding at Visit 1			
No	53.8% (57)	54.8% (63)	0.015
Yes	16.0% (17)	28.7% (33)	
Unknown	30.2% (32)	16.5% (19)	
Breastfeeding at Visit 2			
No	25.5% (27)	22.6% (26)	0.010
Yes	12.3% (13)	28.7% (33)	
Unknown	62.3% (66)	48.7% (56)	
Contraception Use			
None, barrier	28.3% (30)	15.7% (18)	0.009
Pills, patch, ring, DMPA	34.9% (37)	49.6% (57)	
Sterilization or IUD	11.3% (12)	19.1% (22)	
Unknown	25.5% (27)	15.7% (18)	
Referral for Depression			
No	4.7% (5)	1.7% (2)	0.427
Yes	1.9% (2)	2.6% (3)	
Unknown	93.4% (99)	95.7% (110)	
Gestational Diabetes			
Screened with 2 hr GTT*	1.9% (2)	5.2% (6)	0.155
Not screened with 2 hr GTT*	2.9% (3)	5.2% (6)	
Not a gestational diabetic	84.8% (89)	85.2% (98)	
Unknown	10.5% (11)	4.3% (5)	
Subsequent Pregnancy			
Conception < 6 months postpartum	5.7% (6)	7.8% (9)	0.373
Conception 6-12 months postpartum	9.4% (10)	6.1% (7)	
Conception > 12 months postpartum	12.3% (13)	7.0% (8)	
Unknown	72.6% (77)	79.1% (91)	

*Refers to the 75 gram 2 hour glucose tolerance test

Patients were also more likely to come in for their first postpartum visit within 3 weeks. This time frame is important because women who do not breastfeed or achieve lactational amenorrhea can ovulate as soon as 25 days after delivery and will require contraception within this time frame to prevent ovulation.^{5,6}

The American College of Obstetricians and Gynecologists recommends postpartum follow-up 4 to 6 weeks after delivery for uncomplicated patients. A visit 7 to 14 days after delivery is recommended for women who are at high-risk for complications or for women who had cesarean deliveries.⁷ Most pregnant patients who receive care at QEC are considered high risk, if not because of medical comorbidity, because of socioeconomic factors that can place them at a higher risk for adverse outcomes. Low rates of postpartum follow-up are a problem for many clinical sites, particularly those sites which serve a similar population.⁸ For many hospitals and health care organizations, the postpartum visit has also been used as a national standard by which to measure health care quality.⁹ However, there have been few studies to examine ways to improve compliance with postpartum care. This study documents that a low-cost project can significantly improve postpartum follow-up rates.

This study was powered to detect differences in postpartum follow-up. However, perhaps the more important question is whether our intervention led to differences in our secondary outcomes which included clinical outcomes such as glucose tolerance testing for gestational diabetics and referrals for postpartum depression. We did not have a large enough sample to detect statistically significant differences in these types of outcomes. Also, secondary outcomes in this study included documented instances of a particular clinical outcome such as breastfeeding or contraceptive use. However, we did not have information on these outcomes for women who did not follow-up postpartum. Thus, if a woman was breastfeeding but did not follow-up, she would have been placed in the unknown category rather than the breastfeeding category. While this may have contributed to the difference we noted in breastfeeding, other outcomes, such as contraceptive use, are unlikely to be due to differences in reporting as physician intervention was necessary for use of the most reliable contraceptive methods. Also, it is important to note that this study took place in an urban clinic in Honolulu, Hawai'i and may not be applicable to other populations.

In summary, this is one of the only published studies to specifically explore ways to improve postpartum follow-up. While this study describes an intervention that is low-cost and could easily be adopted to improve compliance in other clinics, it is far from perfect. Nearly 14% of women did not return for any postpartum visits following implementation of the initiative. Thus, more strategies are needed to further improve postpartum compliance, particularly in patients at high-risk for adverse outcomes.

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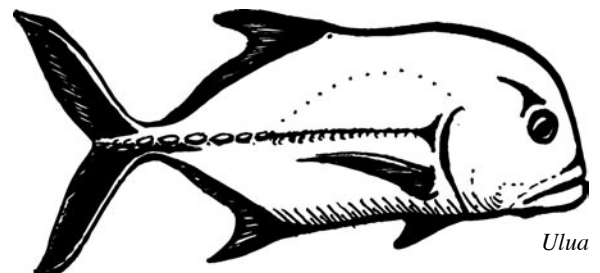
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From Kaka'ako to Manila: Lessons Learned in Global Health

Vanessa Cabe MSII, Eduardo Duquez MSII, Krystle Salazar MSII, Nicolas Villanueva MSII, Allen Wong MSII, and Alycia Yee MSII; John A. Burns School of Medicine, University of Hawai'i

The Philippines is a country of great diversity. There are over a hundred dialects of the Filipino language. The local cuisine consists of delectable food infused with Spanish, Chinese, and other Southeast Asian flavors. The land itself boasts sceneries ranging from bustling commercial centers to misty mountaintops, to sunny ocean shores. Despite such variety a dichotomy remains constant regardless of location—socioeconomic disparities. Manila, the capital city, serves as a prime illustration of economic extremes. Beside gated communities and ritzy establishments lie shanties and squatters. The rich and poor live side-by-side and yet lead very different lives. Wealth is an ultimate goal for many of the citizens, but for many families merely surviving is a feat in itself since the average person can work for a full day and still barely provide enough to feed his family dinner. This nation is home to one of the world's largest shopping malls; yet it is a developing nation. As such, its citizens are all-too familiar with the simple truth that money defines access. Sheltered versus unsheltered, satiety versus famine, and health versus disease are the dominant forms of differences.

Inequality remains at the forefront of everyday living and evident even within their healthcare system. The most apparent inequalities observed revealed the inadequacy of healthcare services offered to all Filipinos. However, there are efforts to change the status quo of patient care.

During 2010, six first year medical students spent their summer elective in Manila at the University of Santo Tomas. They witnessed some of the work being done towards achieving a healthy nation.

Located in the capital city of Manila, the University of Santo Tomas (UST) is one of the oldest institutions in the world and trains many of the Philippines' future physicians. Within the confines of a gorgeous campus stand a set of extremes: a private hospital next to a public charity hospital, connected by a single walkway bridge. Most Philippine citizens are considered poor and can, at most, only afford care in government hospitals or charity divisions of private hospitals. Conditions in the charity division are humble. A typical in-patient room holds eight patients with no partitions. Two to four ceiling fans and an open window provide ventilation for an area filled with patients, visitors, and perspiring medical students and residents attempting to provide care. Conversely, in the private division, patients are able to purchase private rooms with air conditioning. Patients are cared for by Fellows and attending physicians. Fourth year UST medical students staffing the charity division recall numerous instances where they had to beg physicians in the private division for basic materials (such as intravenous lines and plastics) to provide their patients who are too poor to afford those necessities.

All too common are stories of patients visiting the charity hospital, receiving a diagnosis, then learning that the status of the disease is too late-stage or that the appropriate treatment is far too expensive.

For example, at the Pediatric Emergency Department, a one-year-old child was diagnosed with biliary atresia, a congenital defect of the bile duct that is usually given a good prognosis when recognized early and corrected with surgery. By the time the patient was seen, at the hospital, she was presenting symptoms of liver failure, including diffuse jaundice, a severely distended abdomen, and a protruding umbilicus. She now faced a fatal prognosis. In another instance, a woman came into the Pediatric Emergency Department with her two-year-old daughter who was extremely irritable and in obvious distress. After diagnosing her with Kawasaki's disease, the physician informed the mother that she would need immediate treatment with intravenous immunoglobulin. At the time, the mother was unemployed and her husband worked for a company that did not provide medical insurance. The mother looked devastated as she tried to figure out how she could possibly afford her child's treatment. Fortunately, in this rare case, the husband's kind-hearted boss provided money for the medication and the family obtained the proper medical care for their daughter. These patients' stories demonstrate the gross health care disparities that persists in the Philippines. The average citizen simply cannot afford to seek early and appropriate treatment until it is too late.

A major consequence of the inability to afford medical care is patients taking their health into their own hands. At times this could be viewed as a great proactive stance for a person to try and "heal" himself. However, when an individual is uneducated on how to properly take care of himself, such efforts can be more detrimental than helpful. For example, while spending time in the Surgery Outpatient Department, a middle-aged woman arrived complaining of an ingrown toenail that had become excruciatingly painful. She claimed that she had stubbed her toe against a chair and that had caused her nail to become ingrown. Rather than seeking professional medical care, the woman believed that she could treat herself by stuffing her ingrown toenail with crushed antibiotic pills. The physicians at the outpatient department believed this was what caused her ingrown toe nail to become infected. Scenarios such as these are common—people wait until they can no longer endure the complications of their illness and may attempt to medically treat themselves due to the costly expense of treatment. As a result, people only seek proper treatment towards the end of the disease course.

Amidst the inequalities are hopeful signs of improving patient care. The JABSOM students observed the Filipino physicians focus on being astute and treating patients compassionately while being cost-effective. Instructors emphasize to medical students and residents the importance of taking complete histories and performing comprehensive physical examinations. Observing how physicians and medical students in the Philippines relied on their history taking and physical exam alone to arrive at a diagnosis emphasized that the ability to critically think is the most important skill of a physi-

cian. In the United States, this aspect is often lost with concerns of malpractice and results in the order of numerous, often unnecessary, laboratory tests and imaging studies. Since patients often travel far distances to see physicians, simple questions regarding the location of their current residences and descriptions of their homes can suggest possible diagnoses. The value of thorough histories and physical examinations is particularly demonstrated in community health clinics, where patients may not have the means to pay for diagnostic imaging and tests. For instance, a 20-year-old female presented with tea-colored urine and epigastric pain. Her history of present illness revealed that she had a neighbor who had Dengue fever, and her physical examination showed that she had bleeding of the gums. Although initial laboratory blood tests revealed low platelets and an active infection, confirmation of the suspected diagnosis required specialized and expensive tests that the patient could not afford. As such, the diagnosis of Dengue Fever was made based on the patient's history, physical examination, and initial laboratory tests, and supportive treatment (rehydration) was administered. The emphasis on history and physical examination saved the patient and her family further medical costs.

Although the Filipino physicians emphasize a thorough patient history and physical exam to reduce unnecessary expenses, the shortage of resources largely dictates an individual's decision to seek treatment for their illness. A reason for scarcity of resources is that the healthcare in the Philippines is inadequate to meet the needs. According to the World Health Organization (2010), only 3.3% of its Gross Domestic Product is invested in healthcare compared to 15.3% in the United States. Thus it is no surprise why adequate healthcare remains a privilege rather than a right. Insufficiently financed healthcare results in overcrowded clinics and hospitals. The outpatient clinics at UST open at 8:00 a.m., but by 7:00 a.m. there are hundreds of waiting patients. The hallways are overcrowded with patients, while medical students rush to care for as many patients as possible. Unfortunately, the reality is that many patients do not get seen by the end of the day and are forced to return the next day to try again. The Emergency Department in the charity hospital encountered a similar dilemma. The tight quarters of the pediatric emergency wing can barely fit two adjacent hospital beds, a desk, and the staffing physicians. During the peak of patient influx, two patients who received diphenhydramine injections waited with their families on one bed. On the second bed, a third hypothermic patient lay wrapped in bed sheets that were being ironed next to the patient to warm the sheets, while an office lamp was used to warm the child. A dehydrated fourth patient was fed an oral rehydration solution on a chair nearby and a fifth patient with measles was seen in the hallway. There was no space to walk. The traffic of patients continued to grow. The outpatient and emergency department wings of the charity hospital could not address the demands.

In contrast the significant lack of resources in the charity hospital, excellent healthcare facilities are available in the Philippines. Makati Medical Center is a private hospital located in Metro Manila's

business district of Makati. It is comparable to the hospitals found in Honolulu and contains facilities not found in the public hospital at University of Santo Tomas. Makati Medical Center contained special units such as the "Aesthetic Center," "Diabetes Care," "Optimal Aging," "Osteoporosis and Bone Health," and "Weight Wellness." These centers cater to a minority who are able to afford such specialized care. The "Optimal Aging" center had eight patients enrolled who met weekly to perform cognitive stimulating exercises. The "Diabetes Care" center met with diabetic patients to educate them on proper lifestyle changes necessary for maintenance of their disease. These units are beneficial to the minority who can afford such services but overlook the majority of individuals suffering from these diseases.

Less than 50% of people in the Philippines will ever step into a hospital because healthcare, though available, is unaffordable. The lack of resources is a constant struggle. The scarcity of resources limits the delivery of healthcare to needed communities, whether it is the lack of trained staff, facilities, equipment, or supplies. In the Philippines, this was very apparent. Metro Manila, having the greatest concentration of population, is home to an abundance of physicians, nurses, and hospitals with top notch facilities. In the provinces outside Manila, the situation is less fortunate. People live over larger areas with fewer clinics and hospitals. Inadequate staff or facilities are unable to handle the volume or complexity of incoming cases. Patients are forced to travel great distances to be seen and the inadequacies of healthcare are evident.

The JABSOM student's experience of immersion in the difficult life of the Filipino people will not dissipate with time. It was both distressing and valuable to witness the juxtaposition of rich and poor, living as neighbors and yet being treated so differently. The basis for these problems is not unlike the rural health situation in Hawai'i, but rather a more severe presentation. However, such large and complex social problems are deeply rooted in the foundations of the Philippine society and require major analysis and reconstruction in the country's political and social system to address a just solution; something that is far beyond our ability to address in our current status as medical students. This experience has provided further motivation and ideas for us to help with these issues. The students learned that the public can be taught to take a more proactive stance to improve their situation, such as providing healthcare to the poor and underserved areas. The observed emphasis in teaching Filipino medical students the importance of a thorough patient history and physical exam was a reminder to the visiting JABSOM students of the importance of their own clinical skills and critical thinking abilities in arriving at a diagnosis and course of treatment. Future physicians have an obligation to take a stand against such inequalities, in our communities and abroad, to be an advocate for the future of humankind.

Resources

- University of Santo Tomas (<http://www.ust.edu.ph/>)
- World Health Organization-Philippines (<http://www.who.int/countries/ph/en/>)

Addressing Cancer Care Disparities for Filipinos in Hawai'i; A Unique Approach to Communicating About Cancer Treatment

William S. Loui MD, FACP; Assistant Professor of Cancer Control, University of Hawai'i Cancer Center

Have you traveled to a foreign land where the language, customs, and traditions are entirely different than your own? Have you tried to understand Einstein's Law of General Relativity described in French? Or have you tried to read all the fine print in a contract to use software or access an Internet application? Then just imagine how it would be to try to understand the diagnosis, prognosis, or treatment options for cancer. You'll appreciate the huge complexity of any discussion of the risks and benefits or side effects of cancer. Imagine then if you're a non-English speaking immigrant and you've just been diagnosed with cancer. It would be very confusing.

In the 2000 US Census, Filipinos and mixed-Filipinos comprise almost 23 percent of the population in Hawai'i.¹ Filipinos comprise the fastest growing ethnic group in Hawai'i.² Many Filipino immigrants do not speak English or have low English proficiency. Although Tagalog is the national language in the Philippines, Ilokano speakers constitute the predominant majority (85%) in Hawai'i due to immigration patterns. In addition to the more than 80 dialects, the Visayan and Cebuano dialects are also commonly spoken. Thus, communication about basic ideas remains difficult and complex subjects can be very confusing.

Language represents a major barrier to good health care in general and cancer-care specifically. Thus, many patients with Low English Proficiency (LEP) defer needed medical care or miss follow-up appointments or become noncompliant with medications.³⁻⁶ Finally, language barriers can promote misconceptions about cancer.⁷ Culturally competent translations for Tagalog and Ilokano speaking patients represent a genuine need in Hawai'i. Previous experience in screening for breast cancer showed that Tagalog speaking women noted the importance of receiving cancer information in their native language.⁸ Therefore, communication represents a major disparity in health care for cancer patients.

Health care providers and specialists confront this dilemma of effective communication on a daily basis in Hawai'i. Faced with this problem, a group of community oncologists formed the Tagalog and Ilokano Cancer Information Project (TICIP) to provide multilingual, culturally competent cancer materials for both Hawai'i's Filipino community and the health care providers. The initial idea focused on translating existing patient education pamphlets from the National Cancer Institute's (NCI) "What You Need to Know" series from English to Tagalog. However, focus groups with Filipino men and women noted that straight translations were not the best solution; simple translations did not address issues of literacy, different cultural norms, and cultural concepts about illness. So to address this problem of communication, a DVD has been developed to promote understanding and an opportunity for informed discussions. This improved things tremendously.

We worked with community partners at Asian American Network for Cancer Awareness, Research and Training (AANCART); University of Hawai'i (UH) Cancer Center's (CRC) Cancer Informa-

tion Service program; UH Indo-Pacific Language Department; UH Tagalog Language and Literature Program; UH Ilokano Language; Literature, and Film Program; Philippine Medical Association; and the Filipino Medical Student Association at UH John A. Burns School of Medicine (JABSOM). Volunteers from the community provided their individual stories about cancer and survivorship. Charlene Cuaresma, Asian American Network for Cancer Awareness, Research and Training (AANCART) advisory council members include oncologists and nurses that are fluent in Tagalog and Ilokano languages. Aurelio Agcaoili, PhD, Director of the University of Hawai'i's Indo-Pacific Language Department and the Ilokano Language, Literature and Film Program and Ruth Mabanglo, PhD, Director of UH's Tagalog Language and Literature Program checked the accuracy of the translations.

Video professionals from "Jen and Friends" shot, edited, and produced the DVD. Their expertise created a high quality product. Community physicians (including Drs. Danilo Ablan, Carolina Davide, Amelia Jareng, and Erlinda Cachola) and nurses were the on-screen talent. They are leaders in their communities and fluent in Tagalog or Ilokano. All these health professionals contributed their time and efforts to make the DVD a reality. Scientific review by Kevin Cassel at the University of Hawai'i Cancer Center helped address concepts of illness and treatment. Surveys were designed to assess the effectiveness. The DVD and translations were reviewed by lay people, patients, and parents of members of the Filipino Medical Student Association at UH JABSOM.

The format of the DVD breaks down to three parts. First, patient stories about fighting and surviving cancer; their stories were selected to address frequent concerns raised in focus groups. Second, treatment summaries about surgery, radiation, chemotherapy, and clinical trials were included. Finally, the six most common cancers in Filipinos in Hawai'i were selected for separate topics. Breast, lung, colon, prostate, thyroid, and liver cancers were discussed. Significantly, the rates of thyroid and liver cancers are higher than seen in the general American population. Furthermore, the primary language spoken on the DVD is Tagalog or Ilokano; there are English subtitles.

Funding support was provided by American Society of Clinical Oncology, Hawai'i Society of Clinical Oncology, Friends of the University of Hawai'i Cancer Center, American Cancer Society-Hawai'i Chapter, Queen's Medical Center, and Hawai'i Pacific Health System.

In summary, communication continues to be a major health care disparity for minorities. With this DVD, we accomplished something that had not been done before. Although there were many obstacles, the community embraced this project for patient education. This combined effort will help clear the confusion about cancer treatment for Tagalog and Ilokano speaking patients and their families. Plans for making all of the information on websites for the widest possible distribution are in the future.

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Letter to the Editor:

Persistent Danger from Weight Loss Supplements

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Sharma et al. recently presented a case report of possible hepatotoxicity caused by the weight loss supplement *Hydroxycut*.¹ While they correctly state that *Hydroxycut* was removed from the market after being linked to 23 cases of liver toxicity and one death, it is important for clinicians to realize that the product has returned to market, now labeled *Hydroxycut Advanced*.² While the suspected hepatotoxic ingredients hydroxycitric acid (HCA), chromium, and green tea³ have been removed from the formulation of *Hydroxycut* that is currently available, that combination continues to be available in other products currently on the market. The new formulation of *Hydroxycut* now contains the botanical *cissuss quadrangularis*, and reliable evidence for this ingredient's safety and efficacy are lacking. Studies to date have been small, of short duration, and many that are cited in marketing materials contain undeclared conflicts of interest.² For clinicians, Sharma et al's case report and the continuing saga of *Hydroxycut* provides a reminder of the importance

of engaging in meaningful discussions with patients about dietary supplements they may be using, and for the wisdom of publishing case reports about suspected harms caused by such products. For policy makers it is a reminder of the need for better post-market surveillance of these products, especially in the absence of more stringent pre-market regulation. The fact that ingredients suspected of causing sufficient harms to warrant a product withdrawal continue to remain on the market also suggests a need for ingredient-based regulation and oversight, not just a product-based approach. Dietary supplements continue to be widely used in the United States, with recent population-based estimates finding that 49% of Americans use some form of dietary supplement.⁴ While they face minimal regulation and oversight, weight loss supplements in particular frequently contain powerful pharmacologic ingredients whose safety and efficacy are poorly understood.² With no guarantees of potency and purity, and weak post-market surveillance, they remain a potentially potent threat to public health.

I have no conflicts of interest or commercial affiliations/associations.

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UPCOMING CME EVENTS

Date	Specialty	Sponsor	Location	Meeting Topic	Contact
April 2011					
4/3-4/8	IM	University of California San Francisco School of Medicine	Wailea Beach Marriott, Maui	Primary Care Medicine: Update 2011	Web: www.cme.ucsf.edu/cme
4/16	N	Hawai'i Neurological Society	MEB, John A Burns School of Medicine, University of Hawai'i, Honolulu	3rd Annual Scientific Conference of the Hawai'i Neurological Society: Trends in Neurological Medicine	Tel: (808) 537-7300
4/18-4/21	Multi	Scripps Conference Services & CME	Wailea Beach Marriott, Maui	Primary Care in Paradise: Medical Specialties from the Primary Care Perspective	Web: www.scripps.org/event/primary-care-in-paradise
May 2011					
5/14-5/19	P	American Psychiatric Association	Hawai'i Convention Center, Honolulu	164th Annual Meeting	Tel: (703) 907-7300 Web: www.psych.org
October 2011					
10/7-10/8	Multi	Department of Surgery, University of Hawai'i (Jointly Sponsored with the Hawai'i Consortium for Continuing Medical Education)	Hyatt Regency Waikiki	2nd Cross-Cultural Health Care Conference: Collaborative and Multidisciplinary Interventions	Web: www.cchc-conference.com
10/24-10/28	AN	California Society of Anesthesiologists	Grand Hyatt, Poipu Beach, Kaua'i	2011 CSA Fall Hawaiian Seminar	Web: www.csahq.org
January 2012					
1/23-1/27	AN	California Society of Anesthesiologists	Hyatt Regency Maui, Ka'anapali Beach, Maui	2012 CSA Winter Hawaiian Seminar	Web: www.csahq.org
February 2012					
2/13-2/18	IM	University of California San Francisco School of Medicine	Grand Hyatt Kaua'i	Infectious Diseases in Clinical Practice: Update on Inpatient and Outpatient Infectious Diseases	Web: www.cme.ucsf.edu/cme
April 2012					
4/2-4/7	IM	University of California San Francisco School of Medicine	Wailea Beach Marriott, Maui	Primary Care Medicine: Update 2012	Web: www.cme.ucsf.edu/cme

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❖ POLITICIANS MAKE LAWS FOR OTHERS, NOT THEMSELVES.

In Colorado, State Senator Suzanne Williams, age 65, was driving her compact SUV on a highway near Amarillo, Texas, when her car drifted over the centerline. She crashed head-on into a large SUV where a 30-year-old pregnant woman passenger was killed. The baby was removed by c-section and is in critical condition. Senator Williams, vice-chair of the senate transportation committee, said she doesn't remember the accident and doesn't know what happened. Previously she pushed for driver safety and enforcement of seat-belt laws, but her son and two grandchildren were not belted and two of them were ejected in the crash. When asked why they were not belted in, she said she "didn't have time" to talk about it. Perhaps she should take time to think about her political future.

❖ BIKERS KNOW WHY DOGS STICK THEIR HEADS OUT IN THE WIND.

The world of advertising has gone nuts - but you probably already know that. German automaker BMW has created a promotional film to be used in theaters which begins with the action of a motorcycle ridden by champion Ruben Xaus. He describes what motivates him to race and that he is living his dream. Then he finishes with "look deep inside yourself. You can live the dream too. Just close your eyes." At that point the screen projects a bright blast of BMW against a dark background to produce a potent after-image. The moviegoer carries the message BMW for several seconds or perhaps longer depending on the health of the retina. What a great campaign tool - tell the audience of my great devotion to public service then have the jumbo-tron flash "Vote for Stodd son of the sod." They have to carry it away from the rally.

❖ IF YOU SAY YOU DIDN'T KNOW CIGARETTES WERE LETHAL, YOU'RE LYING THROUGH YOUR TRACHEOTOMY.

Researchers at Kaiser Permanente followed 21,000 patients in their health care system for more than 20 years regarding use of cigarettes. They found that those who smoked more than two packs of cigarettes a day in middle age had 157% greater risk of developing Alzheimer's disease compared with non-smokers. Moreover, they had 172% greater risk of dementia, the second most common form and one associated with stroke and conditions affecting blood supply to the brain. Smokers who puffed away less than two packs a day increased their risk by 44%. The study, published in the Archives of Internal Medicine also found that 25% of the sample developed dementia in later years. Lenore Launder, chief of neuro-epidemiology at the National Institute of Aging, said that earlier studies that seemed to show that tobacco had a protective effect were biased because so many heavy smokers died before developing symptoms. Does anyone need still another reason to give up tobacco?

❖ DEATH TO POLIO - NOT THE PATIENT, THE VIRUS.

A new bivalent polio vaccine (BOPV) is being used in India and Nigeria with dramatic effectiveness. An Australian research team reporting in Lancet found that using the vaccine caused a 97% reduction in cases in Nigeria with a drop from 400 cases in 2009 to just 10 in 2010. India found a reduction of 90% moving from 200 cases in 2009 to 32 in 2010. World Health Organization scientist Roland Sutter believes that a determined use of this bivalent vaccine will cause polio to join small pox as a historical disease. Those of us who were around before the original 1956 vaccine recall the fear and dread that polio brought to the public.

❖ DETOUR THERE'S A RUCCY ROAD AHEAD.

Twenty years ago the American Medical Association (AMA) established a secretive panel of 29 members who meet three times a year. This semi-mysterious group is called the Relative Value Scale Update Committee (RUC), and they command tremendous power over physician reimbursement. Their recommendations go to Centers for Medicare and Medicaid Services (CMS) which accepts 90% of more of their plan. Private insurers and other programs tend to follow suit in creating their own schedules. The RUC generates challenges that claim the committee affords too much money for sophisticated procedures and gives too little to nuts-and-bolts primary care doctors. The RUC is also faulted for using outdated formulas dating back to the 1990s. Many procedures now are minimally invasive and have been perfected, modified and removed from the hospital to ambulatory care

where the cost is often far less. A surgeon who previously served on the RUC stated that the system pits specialty against specialty and surgeons against primary care. Primary care groups have pushed for more representation without success. Barbara Levy, M.D. a Seattle gynecologist who heads the committee says it is an expert panel and not meant to be representative. Hey, admit it, Doctor. Pediatricians and family physicians are under-reimbursed and everyone in medical practice knows that.

❖ A SNITCH IN TIME SAVES MORE THAN NINE - MILLION, THAT IS.

In 2002, Glaxo-Smith Kline PLC was aware of quality problems in their facility in Sidra, Puerto Rico. It was reported that the plant was mixing drugs of different types and strengths in the same container. Plant managers made no attempt to issue a recall or remedy the cause. Glaxo sent quality assurance officer Cheryl Eckard to investigate and clean up the mess. Ms. Eckard made strong advice that the plant stop shipping and suspend manufacturing for two weeks to provide time to resolve the problems. The recommendations were ignored because her supervisors were busy preparing to market a new diabetes drug Avandamet. She made additional trips to Sidra, and finally told her boss that she would not participate in a cover-up of the problems in Puerto Rico. The following year Ms. Eckard was terminated in what the company called a "redundancy" adjustment. After she left the company she continued to work with the compliance department, but she says the company took no action. She blew the whistle, and reported the problem to the FDA's San Juan office. The following year she filed a lawsuit under the U.S. False Claims Act. The FDA investigated with search warrants, document collection and other potential evidence. Ultimately, the government secured a guilty plea and Glaxo paid \$750 million to settle. And Ms. Eckard? She received \$96 million, the reward percentage provided in the law. At age 51, it represents fairly comfortable early retirement.

❖ DRUG REPS WANT TO TURN YOUR YAWN INTO A YEARN.

The film is entitled Love and Other Drugs, supposedly a romantic comedy, and is a portrayal of a very aggressive drug industry sales rep. The story is about a salesman who goes to great lengths to sell pharmaceuticals by stealing a competitor's samples, lining up dates for doctors and even sleeping with a medical office receptionist. The story is loosely based on a novel, "Hard Sell, the Evolution of a Viagra Salesman." The director, Ed Zwick, admitted that the love story is invented, but the setting is based on fact. He consulted doctors and pharmaceutical sales people to be sure of the details. The action takes place in the 1990's when direct-to-consumer advertising was blooming, and the Food and Drug Administration had just approved Viagra. Sales reps discuss pushing products for off-label use. Pfizer, maker of Viagra, pleaded guilty and paid a fine of \$2.3 billion in 2009 for abuses described in the movie. A stiff fine if you ask me. Those who are still thinking about this film four hours later, need to call their doctor.

❖ THE CUBS INSTALLED A NEW PITCHING MACHINE. IT BEAT THEM 4 TO 1.

Unusual baseball injuries of 2010 include:

1. Kendry Morales of the Los Angeles Angels hit a home run, then jumped on home plate and broke his leg.
2. Brian Roberts of the Baltimore Orioles struck out, then hit himself on the head with his bat. He was out for a week with a concussion.
3. Geoff Blum of the Houston Astros needed elbow surgery after straining to put on his uniform shirt.
4. Chris Coghlan of the Florida Marlins playfully pushed a congratulatory post-game cream pie in a teammate's face, and tore his own knee which required surgery.

ADDENDA

- ❖ No one in the lower 48 states lives more than 115 miles from a McDonald's.
- ❖ Steve Spurrier, South Carolina football coach talking about a fire in the Auburn football dorm that destroyed 20 books, "The real tragedy is that 15 of the them had not been colored."
- ❖ If you push the envelope and nothing happens, perhaps it's stationary.
- ❖ Condom history: in 1272 the Arabs invented the first condom using a goat's intestine. In 1763 the British refined the idea by first removing the intestine from the goat.
- ❖ An eye surgeon on an island off Alaska's coast is called an optical Aleutian.

ALOHA AND KEEP THE FAITH — rts■

(Editorial comment is strictly that of the writer.)

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2009 HAPI's Total Quarterly Costs (Including Fully Mature Retroactive Coverage)	
General Surgery	\$4,168
Internal Medicine	\$1,373
Pediatrics	\$1,662

The above illustration is an example of HAPI's 2009 fully mature costs. These costs apply to physicians who need three years or more of retroactive coverage upon joining HAPI. If you do not need retroactive coverage or if you join HAPI out of a residency or fellowship, you will pay significantly less than shown above. The above specialties were selected for illustrative purposes only. Call HAPI for your specialty's costs.



If you are a D.O. or M.D. in private practice, call Jovanka Ijacic, HAPI's Membership Specialist to discuss the cost savings HAPI could offer you.

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Lance M. Kurata, M.D., Internist

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Leland Dao, D.O., Family Practitioner