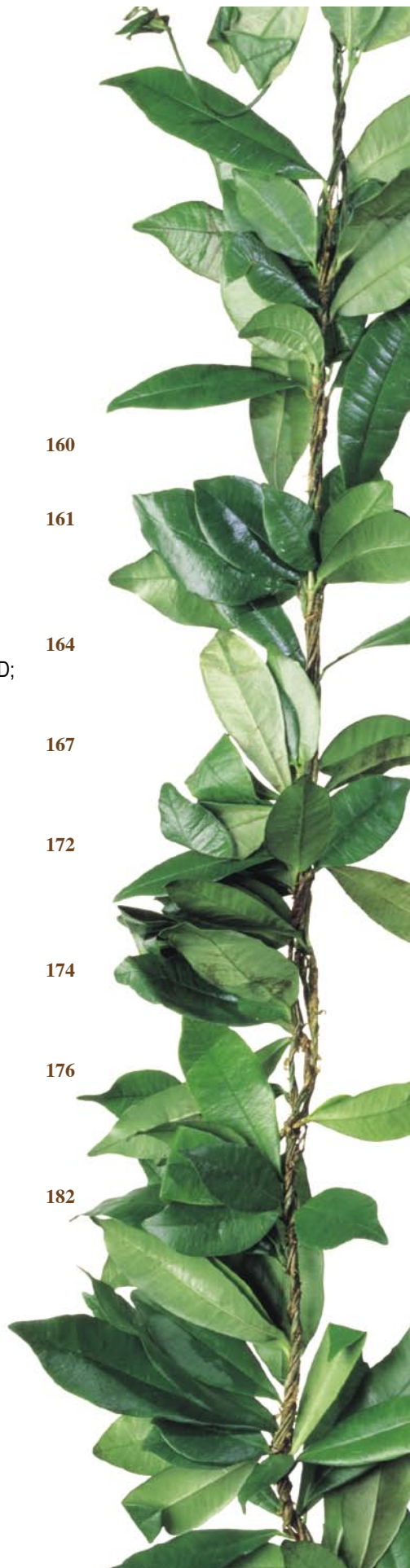


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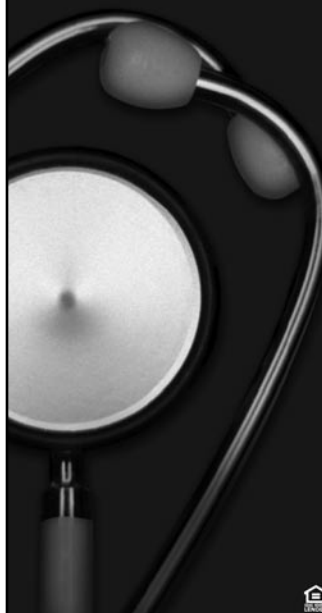
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COMMENTARY

A Confusing *Fusobacterium* Infection

Joel D. Brown MD, FIDSA, DTMH; Department of Medicine, John A. Burns School of Medicine, University of Hawai'i

In this edition of the Hawai'i Medical Journal, Lin et al. describe a patient with severe sepsis, jaundice, and diffuse pulmonary infiltrates. The authors had presented this case as an unknown at an Infectious Diseases Conference. Several Infectious Diseases faculty initially believed that the most likely diagnosis was leptospirosis. Severe leptospirosis often causes severe sepsis with diffuse pulmonary infiltrates with or without jaundice. Leptospirosis is a zoonosis involving an animal reservoir, commonly the rat or mongoose, which contaminates freshwater or other environments with infectious urine. Humans and animals may become infected after contact with contaminated fresh water or mud.

When the audience heard that one week before onset of illness the patient had hiked to Manoa Falls, a popular attraction on O'ahu, they were convinced it was leptospirosis. After all, leptospirosis is endemic in Hawai'i.¹ The Hawai'i State Department of Health even posts red signs beside popular freshwater swimming and hiking sites, including Manoa Falls, which read: "Warning! Leptospirosis Health Hazard: Swim or hike at your own risk." Also, after the Manoa Stream flooded our Medical School's Manoa Campus in 2004, at least two UH faculty members were infected with leptospirosis.² Weil's disease is a severe form of leptospirosis manifested by fever, jaundice, and acute renal failure. Other manifestations of leptospirosis include thrombocytopenia, and leucocytosis. Severe leptospirosis, even without jaundice, can cause diffuse pulmonary infiltrates.³ All of these features were present in Lin's case.

However, as the case presentation continued the audience was humbled to learn that the patient's blood cultures were positive for *Fusobacterium necrophorum*, a gram-negative, anaerobic bacillus. Additionally, subsequent imaging showed that the diffuse infiltrates were not due to pulmonary hemorrhage, as may occur in leptospirosis, but were septic emboli originating from septic thrombophlebitis of the internal jugular vein that led to scattered areas of lung cavitation – the Lemierre syndrome. The images included in Lin's article are excellent demonstrations of the clinical manifestations of this unusual syndrome.

Fusobacteria are gram-negative, anaerobic, non-spore-forming bacilli. They are part of the mucosal flora of the oral pharynx, the female genital tract, and the gastrointestinal tract.⁴ *Fusobacterium* bacteremia is uncommon, but may occur after inflammation or injury to these tissues.⁴ Infection due to one *Fusobacterium* species, *Fusobacterium necrophorum*, and its role in the Lemierre syndrome, was recently reviewed by Riordan.⁵ This uncommon syndrome typically is a life-threatening complication of acute pharyngitis in older children and young adults. Approximately 10% of published cases are associated with infectious mononucleosis. Inflammation of the pharyngeal mucosa may facilitate bacterial invasion of the deep tissues of the neck leading to septic thrombophlebitis of the internal jugular vein and septicemia with septic emboli to the lungs and other sites.⁵ Hyperbilirubinemia with slight elevation of liver enzyme levels may occur in one-third of patients, but frank jaundice is uncommon. This is in contrast to the high frequency of jaundice

reported in the preantibiotic era. The course of the disease seems to have changed since Lemierre's original description, probably as a consequence of widespread antibiotic use for pharyngeal infections. The typical triad in a recent series was pharyngitis, a tender/swollen neck, and non-cavitating pulmonary infiltrates.⁶ The case reported by Lin and colleagues is more typical of the Lemierre syndrome as seen in the pre-antimicrobial era.

Centor recently addressed the role of *F. necrophorum* in causing acute pharyngitis in adolescents and young adults.⁷ He suggests that *F. necrophorum* pharyngitis occurs as often as group A streptococci pharyngitis in this population, but that the risk for Lemierre syndrome after *F. necrophorum* pharyngitis exceeds the risk for acute rheumatic fever after group A streptococci pharyngitis. Furthermore, the morbidity and mortality of the Lemierre syndrome may exceed the morbidity and mortality of acute rheumatic fever. He proposed that the diagnostic paradigm for adolescent pharyngitis should be expanded to consider infection with *F. necrophorum* in addition to group A streptococci. This would require more reliable diagnostic techniques for diagnosing *F. necrophorum* pharyngitis. In the meantime, Centor advises that adolescents and young adults with acute pharyngitis who develop bacteremic symptoms should be aggressively treated with antibiotics effective against *F. necrophorum* infection, e.g., penicillin and metronidazole, or clindamycin alone.⁷

An unusual feature of the case presented by Lin et al. is the older age of the patient and the lack of pharyngitis or other obvious infection in the oropharynx. However, not all cases have a definite history of oropharyngeal infection.⁵ Although the authors did not describe oral or dental abnormalities in their patient, he had undergone dental cleaning one week prior to the onset of illness. Perhaps minor breaks in the gingival mucosa during dental cleaning allowed *F. necrophorum* in the oropharynx to invade the soft tissues of the neck and the jugular vein. In this case presented by Lin et al., the best diagnosis on admission seemed to be leptospirosis. But the correct diagnosis was the Lemierre syndrome.

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Lemierre's Syndrome Mimicking Leptospirosis

Dagmar Lin MD; Nuntra Suwantararat MD; and Royden S. Young MD

Abstract

*Lemierre's syndrome is a suppurative thrombophlebitis involving the internal jugular vein, most commonly associated with *Fusobacterium necrophorum*, usually a complication of oropharyngeal infections. This syndrome is rare and is often overlooked. We present a case of sepsis mimicking initially severe leptospirosis (Weil's disease) due to acute febrile illness with multiorgan failure and hyperbilirubinemia. Finally, blood cultures revealed *Fusobacterium necrophorum* and computed tomography (CT) demonstrated bilateral pulmonary nodules and a thrombus in the right internal jugular vein. Early clinical suspicion is crucial so that appropriate diagnostic investigation and antibiotic therapy can be initiated to minimize the risk of life-threatening complications.*

Case Report

A 56-year-old healthy man presented with acute onset of fever, chills, abdominal pain, intermittent non-bloody diarrhea, and jaundice for 9 days. He had a recent history of hiking at Manoa falls, O'ahu, Hawai'i, one week prior to admission, without other travel history. Physical examination revealed a temperature of 39.8 degree Celsius, blood pressure of 139/68mmHg, pulse of 126/min, respiratory rate of 32/min. He had icteric sclerae, conjunctival suffusion and hepatomegaly, but no skin lesions, cardiac murmurs, abnormal breath sounds or splenomegaly. Initial laboratory data was significant for metabolic acidosis, acute renal failure, hyperbilirubinemia, anemia and thrombocytopenia (Table 1). The patient rapidly developed altered mental status and respiratory failure with initially patchy infiltration on chest x-ray (Figure 1) and evidence of bilateral pulmonary cavities on CT of the chest (Figure 2) and, later on, on chest X-ray (Figure 3). Leptospirosis or Weil's disease was the initial diagnosis. The patient was started on ceftriaxone which was changed to imipenem/cilastatin, vancomycin and doxycycline. On the third day of hospitalization, two sets of blood cultures from the day of admission were positive for gram-variable rods which were later confirmed as *Fusobacterium necrophorum*. Two further sets of blood cultures were also positive for the same pathogen. CT of the neck with intravenous contrast showed a thrombus in the right internal jugular vein compatible with septic thrombophlebitis (Figure 4). The definitive diagnosis was changed to Lemierre's syndrome, given the anaerobic bacterial infection and septic emboli. Serological work up studies for leptospirosis, viral hepatitis, HIV, dengue fever, malaria, tuberculosis, and rickettsial diseases all were negative. Stool cultures for bacteria which included *Clostridium difficile*, ova and parasites were negative. Transesophageal echocardiogram showed normal ejection fraction without evidence of valvular abnormalities or cardiac vegetations. The antibiotic regimen was changed to clindamycin after the patient developed a rash with imipenem/cilastatin. After extubation, patient reported a history of dental cleaning one week prior to the onset of symptoms. He recovered with complete resolution of the acute renal failure and improving hyperbilirubinemia.

Discussion

Lemierre's syndrome in our patient was based on the hallmark features with possible (1) primary infection in the oropharynx, (2) septicemia documented by at least 1 positive blood culture, (3) radiographic or clinical evidence of internal jugular vein thrombosis, and (4) 1 or more metastatic foci.¹ The first case of Lemierre's syndrome was reported in 1900 by Courmont and Cade. Lemierre, a French pathologist, characterized the syndrome in twenty cases of "postanginal septicemia" with sore throat, followed by rigors, pulmonary infarcts and arthritis.^{2,3} Fewer than 160 cases of the classic syndrome have been reported, with approximately one third occurring since 1988.¹ A Danish retrospective study conducted between 1990 and 1995 found an incidence of 0.8 per million persons per year.²

The patient's initial presentation mimicked severe leptospirosis (Weil's Disease) based on epidemiological and clinical features. Leptospirosis is caused by the spirochete *Leptospira* and acquired by contact with infected animals, mostly rodents, directly or, more commonly, by exposure to contaminated soil or fresh water. Outbreaks may follow periods of excess rainfall. The mortality rate is usually 1 to 5%, but is up to 40% in severe cases (Weil's disease). The Center for Disease Control estimated the incidence of leptospirosis to be 100-200 cases per year in the United States with approximately 50% of cases occurring in Hawai'i.⁴ In 1992, the incidence of leptospirosis in Hawai'i was approximately 128 cases per 100,000 persons.⁵ During the period of 1998-2007, 22-52 cases of leptospirosis were reported to Hawai'i State Department of Health, annually. The difference in numbers might be due to underreporting. Poor prognostic factors include age more than 40 year-old, signs of altered mental status, acute renal failure, respiratory insufficiency, hypotension, and arrhythmias.⁶ Thrombocytopenia may occur in the absence of disseminated intravascular coagulation and may accompany progressive renal dysfunction.⁷ Significant conjugated hyperbilirubinemia accompanied by mild transaminitis is frequently seen.

Unexpectedly, our patient's blood cultures revealed *Fusobacterium necrophorum*, which is most commonly associated with Lemierre's syndrome.¹ *Fusobacterium necrophorum* is an obligate anaerobic gram-negative bacterium, which is part of the normal flora of the oral cavity as well as the gastrointestinal and female genital tracts. Intravascular invasion and thrombosis may be explained by its toxins, including lipopolysaccharide endotoxin, leukocidin, hemolysin, coagulase, and platelet aggregating factor.⁸ Other bacteria such as *Bacteroides melaninogenicus*, *Eikenella corrodens*, and anaerobic streptococci, as well as to a lesser extent group A beta-hemolytic streptococci, *Streptococcus pneumoniae*, and *Staphylococcus aureus* have been described with Lemierre's syndrome.⁹ The initial presentation of Lemierre's syndrome is usually nonspecific and includes sore throat, fever, rigor, and lateral neck tenderness. Infection starts with pharyngitis or tonsillitis.^{2,3,8,9} Then anaerobic organisms spread into the lateral pharyngeal space leading to internal jugular vein septic thrombophlebitis which is often misdiagnosed as cervical

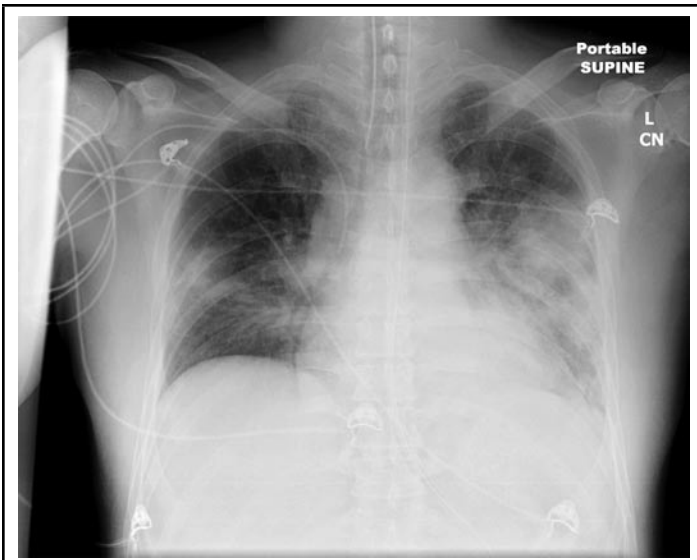


Figure 1.— Chest X-ray Showing Bilateral Patchy Infiltrations

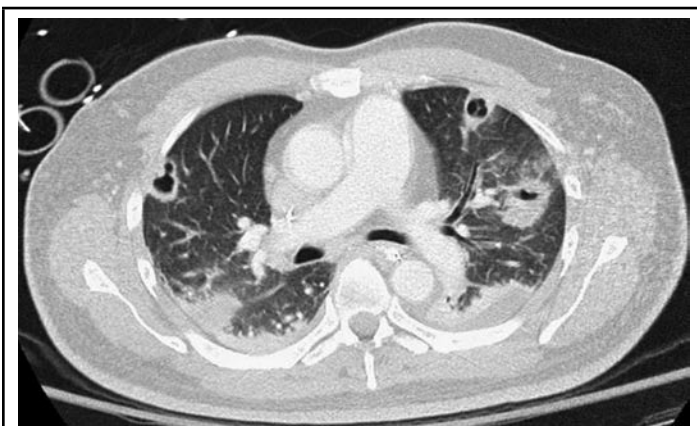


Figure 2.— CT-Chest with Contrast Revealing Multiple Bilateral Pulmonary Cavities

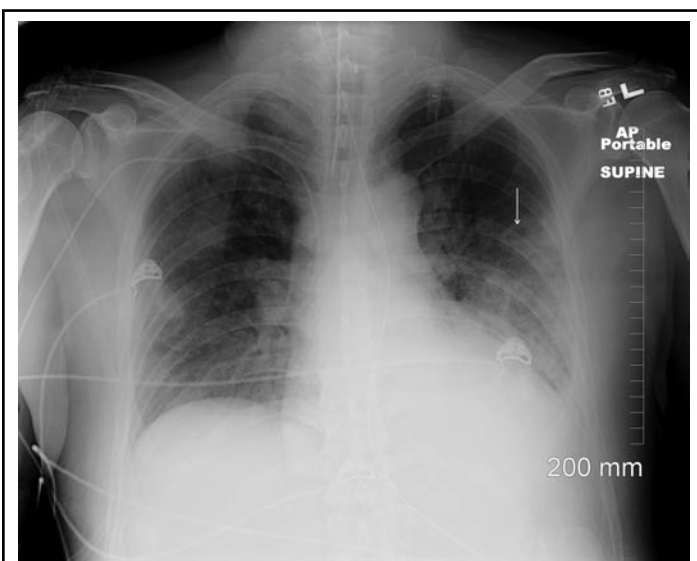


Figure 3.— Chest X-ray Suggesting Pulmonary Cavity (arrow)

lymphadenitis.⁸ The septic clots dislodge from the internal jugular vein thrombus and may cause pulmonary infarcts.^{2,3,8} Other complications include sepsis, hyperbilirubinemia, pleural effusions, and empyema. Hematogenous seeding can occur, resulting in septic arthritis, meningitis, endocarditis, or soft tissue infection.⁸

Retrograde venography is the gold standard for diagnosis of venous thrombosis but this procedure is invasive.^{10,11} Currently, noninvasive methods such as gallium scan, ultrasonography, contrast-enhanced CT, and magnetic resonance venography (MRV) have shown to be reliable for diagnosis.^{3,10,11} Auber AE et al.¹² reported that MRV was the most accurate and reliable noninvasive method of diagnosis, and its correlation with contrast venography was as high as 97%. Clinical studies for definite antibiotic regimen in patients with Lemierre's syndrome are lacking due to the rare occurrence of this syndrome. Treatment regimens included combination therapy of four to six week-duration with penicillin plus either metronidazole or clindamycin, or monotherapy with ampicillin-sulbactam, ticarcillin-clavulanate, piperacillin-tazobactam or imipenem. Currently, antibiotics against beta-lactamase-producing bacteria are becoming the treatment of choice due to resistance.¹³ The mortality in untreated patients is as high as 30% to 90%, with rates of endocarditis and embolic events estimated at 12.5% and 25%, respectively.³ Monotherapy with metronidazole is not recommended based on the severity of the infection and possible resistance of *Fusobacterium*.³

The role of anticoagulant therapy is controversial.¹⁴ Because of the possibility of extending the infection by dissolving clots and transporting it through the blood stream, anticoagulation must be carefully monitored. Some authors suggest anticoagulation should be reserved only for thrombosis retrograde to the cavernous sinus.¹⁵ Bach MC et al.¹⁶ reported a case of Lemierre's syndrome with persistent fever and chest pain that improved after intravenous heparin was begun. Surgical drainage of purulent collections may be required in advanced disease.¹⁷

Lemierre's syndrome was an unexpected diagnosis. Our patient probably acquired a *Fusobacterium* oropharyngeal infection with bacteremia from a recent dental procedure which was complicated by sepsis and pulmonary septic emboli.

This case report was presented as a poster presentation at ACP Hawai'i chapter meeting, January 2009.

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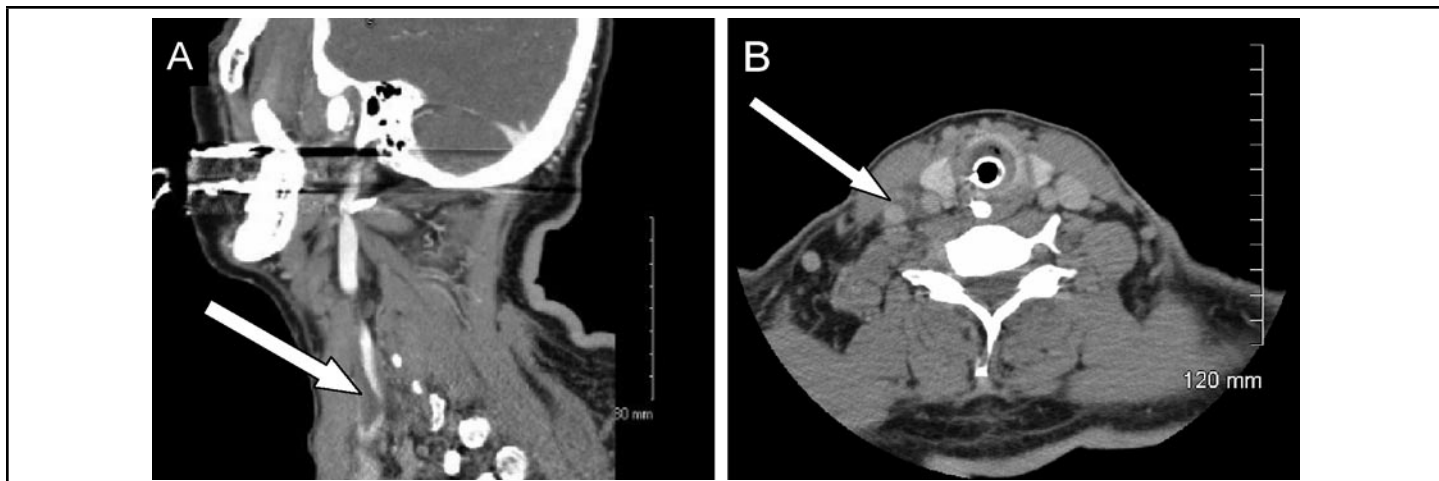


Figure 4.— CT-Neck with Contrast Revealing a Thrombus in the Right Internal Jugular Vein (arrow). The Filling Defect of Contrast Dye Reveals the Thrombus in the Right Internal Jugular Vein (arrow), in Sagittal View (A) and Horizontal View (B).

Table 1.— Laboratory Test Results Of The Case Patient

Variable	(Normal range)	Day of Admission	Fifth Hospital Day
Hemoglobin (g/dL)	12-16	14.2	9.2
White cell count (cells 10 ⁹ /L)	3.8-10.8	15.3	18.7
Platelets count (cells 10 ⁹ /L)	140-240	96	75
Differential count (%)			
Neutrophils (%)	40-80	95	96
Bands (%)	0-6	0	0
Lymphocytes (%)	12-44	4	0
Monocytes (%)	0-12	0	2
Eosinophils (%)	0-7	0	0
Basophils (%)	0-2	0	0
MCV (fl)	82-101	66.4	65.1
MCH (pg)	26-34	21.6	21.4
Sodium (mmol/L)	134-146	133	145
Potassium (mmol/L)	2.4-4.8	3.3	3.8
CO2 (mmol/L)	23-31	25	26
BUN (mg/dL)	6-19	87	31
Creatinine (mg/dL)	0.6-1.5	3.3	1.0
Total bilirubin (mmol/L)	0.2-1.5	8.8	23.0
Direct bilirubin (mmol/L)	0-0.3	6.1	11.4
ALT (U/L)	0-40	61	51
AST (U/L)	0-37	65	53
Alkaline Phosphatase (U/L)	33-130	354	156
Albumin (g/dL)	3.4-5.0	2.1	1.2
Total protein (g/dL)	6.2-8.2	6.0	4.7
LDH (IU/L)	118-242	170	199
Lactate (mmol/L)	0.5-2.2	3.0	3.0
CK (IU/L)	35-232	32	none
PTT (sec)	24-40	33.2	35.3
INR	<1.0	1.3	1.6
Fibrinogen (mg/dl)	200-400	610	none

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Abbreviations: MCV: mean corpuscular volume, MCH: mean corpuscular hemoglobin, CO2: carbon dioxide, BUN: blood urea nitrogen, ALT: alanine aminotransferase, AST: aspartate aminotransferase, LDH: lactate dehydrogenase, CK: creatine kinase, PTT: partial thromboplastin time, INR: international normalized ratio

Addressing the Excess Breast Cancer Mortality in Filipino Women in Hawai'i through AANCART, an NCI Community Network Program

Reginald Ho MD; Miles Muraoka PhD; Charlene Cuaresma MPH; Reuben Guerrero MD; and Amy Agbayani PhD

Abstract

Filipino women are more likely to die of breast cancer than their major Asian American counterparts even though they do not have the highest incidence of that cancer. Analysis showed that they have a more advanced stage at the time of diagnosis and they have low rates of compliance to mammography guidelines, both of which factors may contribute to their high mortality rate. A broad based but targeted breast cancer awareness effort was directed to Filipino women, which included involving the media, the training of key community leaders, and the development of partnerships with health organizations with a like mission. After four years of effort, it was possible to demonstrate improvement in mammography rates in Filipino women that approached those of the general population in Hawai'i.

Introduction

In 1999 the Institute of Medicine issued a report, *The Unequal Burden of Cancer*, which observed that not all ethnic minorities and medically underserved shared in the progress made against cancer.¹ A White House initiative was issued in 1999 to develop a strategic plan for reducing health disparities. As applied to cancer, the National Cancer Institute defines "cancer health disparities" as "differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States." The populations that tend to be affected by disparities are racial and ethnic minorities, residents of rural areas, women, children, the elderly, and persons with disabilities.

In 2000 The National Cancer Institute initiated a Strategic Plan to Reduce Cancer-Related Health Disparities and issued an RFA (request for application) to build Community Networks to promote cancer awareness, cancer research and training in the minority populations. The Asian American Network of Cancer Awareness, Research, and Training (AANCART), under the leadership of Dr. Moon Chen, Associate Director of Population Research and Cancer Disparities, at UC Davis Cancer Center, was awarded the task of addressing cancer disparities in the Asian American population. In 2002 the Hawai'i AANCART site was established to address cancer related disparities in the Filipino population in Hawai'i.

Asian Americans make up 4.2% of the US population according to the US Census 2000. In Hawai'i the Asian population is 41.6% when counted alone and 58% when counted alone or in combination with other races. Cancer is the second leading cause of death for men and women in the United States; however, for Asian American women, the leading cause of death is cancer.² Breast cancer is the most common cancer in Asian women in the United States and the second leading cause of cancer deaths.³ However, Filipino women in the United States have breast cancer as their most common cancer and it is also their leading cause of cancer deaths.⁴ When compared to other major Asian groups, Filipina are found to have the highest mortality rate due to breast cancer although they do not have the highest incidence of that cancer.⁴

Increased breast cancer mortality can be due to a number of factors, including biological characteristics, socio-economic factors and cultural factors. However, the stage at diagnosis is a strong predictor of cancer survival. Late stage at diagnosis tends to correlate with higher mortality rates. Information from The Hawai'i Tumor Registry noted that breast cancer was diagnosed at a late stage in 34.9% of Filipino women compared to 29% of Chinese women and 22.4% of Japanese women.⁵ This disparity in the stage at diagnosis was further explored by the authors. Factors frequently cited for late diagnosis in the ethnic minority populations are lack of access to medical care, the fear of cancer, and cultural factors. It has also been amply documented that lack of timely mammography results in late diagnosis and poor survival of breast cancer. Search was then initiated to look at the mammography rates for Filipino women.

Data from the State of Hawai'i BRFSS reports indicate that in 2002, 19.2% of Filipino women age 40 and over had never had a mammogram. This was the highest percentage rate of all the major ethnic groups surveyed in Hawai'i. Also in 2002 fewer Filipino women had a mammogram within the past one year when compared with the other major ethnic groups.⁶ A large health plan in Hawai'i compiled screening rates for its membership for the twelve month fiscal period 2003 to 2004 and noted that its Filipino members had a significantly lower screening mammography rate (35.1%) than its general membership (55.7%).⁷ This rate was low in spite of repeated reminders sent to all members of the health plan who had not had their regular mammograms.

A review of the literature identified studies documenting low mammography rates in Filipino women in California as well. Maxwell⁸ and Ko⁹ studied breast cancer screening behaviors in Filipino women in California and identified multiple barriers that hindered their participation in routine screening mammography. Barriers cited were concern over cost, inconvenience of time and of getting to the mammography facility, denial that mammography is needed in the absence of symptoms, and embarrassment. Maxwell reported that personal recommendation from a physician to get a mammogram was the most important determinant in swaying a Filipino woman to get a mammogram.⁸

Methods

When Hawai'i AANCART was organized, it was recognized that breast cancer mortality was a major cancer-related disparity for the Filipino women and so this population was chosen as its primary focus. Based on the low mammography rate noted above, the Hawai'i AANCART team chose to address increasing the mammography rate among Filipino women as the tool to lower the stage at diagnosis of breast cancer, with the hope that this will ultimately result in improvement of the survival rate in this population.

Focus groups were formed to study the factors responsible for the low mammography rate among Filipino women in Hawai'i. One was comprised of physicians and three were comprised of Filipino

women. Interesting results were obtained regarding the knowledge, attitudes, and behaviors of the participants toward breast cancer screening. The barriers to routine mammography most often cited by the physicians were physical pain experienced by the women during the mammogram procedure, lack of time, lack of knowledge, misconceptions about breast cancer, and scheduling difficulties. It was noted that most of the women age 40 and above were foreign born and they may not have had adequate information about breast cancer. The barriers most often expressed by the Filipino women were competing priorities, including time constraints, navigation issues, aversive effects of pain, and a fear of discovery of cancer.

The women were also asked to discuss possible solutions to address these barriers. According to the focus group participants, the fear associated with a cancer diagnosis could be addressed by an educational campaign, consisting of messages about the importance of early detection through posters and brochures in physicians' offices, community centers, churches, and other social gatherings. These messages should emphasize positive aspects of getting mammograms, rather than using scare-tactics. Celebrities or people prominent in the Filipino community were identified as being effective messengers. Filipinas in the focus groups also generated slogans to emphasize the significance of early detection and its relation to survivorship. Incentives were discussed as motivating influences that could increase mammogram use. These women also felt that their physicians should take a more active role in recommending mammograms and scheduling appointments.

Based on the focus group findings that indicate the importance of a broad based educational campaign, a targeted multi-media campaign was carried out. This campaign began with a series of public service announcements broadcast on KNDI 1250 AM, a radio station that holds the title for the longest running Philippine language programming in the nation. Sixty-second spots in three Filipino languages recommending mammography were aired. There were also interviews with physicians and breast cancer survivors in a talk show format. Human interest articles highlighting breast cancer survivors with the message stressing the importance of mammography were printed in two Filipino American language newspapers, both publications with a high readership among the Filipino population. For nine months, bus posters encouraging mammography were put on bus routes which served the Filipino population. These posters pictured a Filipina breast cancer survivor touting the importance of breast cancer screening.

Presentations were made to two annual meetings of the Philippine Medical Association of Hawai'i (PMAH) describing the mammography intervention project and soliciting their cooperation and support for our efforts. Generous cooperation from the PMAH members was obtained. A luncheon presentation was made to Filipino nurses and medical assistants from the offices of Filipino physicians who took care of the Filipino population in the towns of Waipahu, Ewa, and Kalihi, where Filipinos comprise large segments of the community. Two all-day training sessions on Cancer Awareness 101 were conducted by Hawai'i AANCART staff and volunteers to nearly 150 Filipino leaders in Honolulu and on Kauai.

In 2007 Hawai'i AANCART developed a memorandum of understanding with the American Cancer Society Hawai'i-Pacific Corporation (ACS) to work together to address the Filipino population as a population group with cancer-related disparities. Two

training sessions were conducted with the population group leaders, addressing the importance of cancer screening with an emphasis on mammography. A memorandum of understanding was also developed with the Hawai'i Cancer Information Service, who provided valuable assistance in developing outreach to the Filipino community. Hawai'i AANCART also partnered with the Hawai'i Breast and Cervical Cancer Control Program (BCCCP) to enroll low income, uninsured, or underinsured Filipino women to screen for breast and cervical cancers. In the 5 years from 2005 through 2009, 1143 Filipino women were given mammograms funded by the Centers for Disease control and Prevention (CDC) and the State of Hawai'i, who otherwise would not have had access to mammograms.

Another community cancer awareness approach was to work with the Filipino Community Organizations. The executive boards of five Filipino community organizations were challenged to encourage their membership to achieve 100% mammography rate and this challenge was enthusiastically accepted. By voluntary self-reporting, 74% of women in these community organizations reported getting screening mammograms in the first two years of the program (2005, 2006) and 76% obtained mammograms the second two years (2007, 2008). These rates compared favorably with the State of Hawai'i BRFS data for the general population, which reported that 77.3% of all women above the age of 40 surveyed in 2006 had mammograms within the previous two years and 78.2% did so in 2008.⁶

Working through these Filipino community organizations allowed a convenient mechanism for disseminating breast cancer awareness to an adult female population and it offered the opportunity to take advantage of the cohesiveness of these organizations. The members of these five Filipino community organizations were very enthusiastic about the 100% mammography challenge and they felt that it would be a worthwhile project to extend this challenge to other community organizations in the United Filipino Council of Hawai'i in the future.

Results

After the four years of effort promoting breast cancer awareness and breast cancer screening in Filipino women, the above-mentioned large Hawai'i health plan was asked to obtain their rates of mammography screening for their Filipino cohort in comparison to their total population. They reported that the yearly mammography screening rates for the Filipino women in their health plan showed a significant yearly increase for the four years 2004 to 2008 as follows: 38.14%, 42.51%, 52.91%, and 62.45%. Comparable yearly mammography screening rates for the total health plan population were stable as follows: 69.81%, 69.75%, 71.08%, and 69.69% (Table 1). By year four, the mammography rate of the Filipino women was approaching the rate of the total health plan members.

The statewide Hawai'i BRFS data on mammography rates, which are sampled yearly by the Hawai'i Department of Health, reported that the percentage of Filipino women who have never had a mammogram in their lifetime decreased significantly during the four years of campaign, 2004-2008. In 2002, 19.2 % of Filipino women age 40 and over who were surveyed had not had a mammogram in their lifetime. This percent was 16.7% in 2003; 17.6% in 2004; 15.1% in 2005; 11.9% in 2006; 9.1% in 2007; and 9.9% in 2008. Thus, the percentage of Filipino women who never had a mammogram fell from 19.2% in 2002 to 9.9% in 2008 (Table 2).⁶

Time Period	Hawai'i Filipino IPA			Health Centers Total*		
	Numerator Count	Denominator Count	Rate	Numerator Count	Denominator Count	Rate
July 2004 through June 2005	119	312	38.14%	7,186	10,294	69.81%
July 2005 through June 2006	142	334	42.51%	7,833	11,230	69.75%
July 2006 through June 2007	191	361	52.91%	8,380	11,790	71.08%
July 2007 through June 2008**	444	711	62.45%	18,178	26,083	69.69%

* "Health Centers Total" includes Hawai'i Filipino IPA members

**Measure denominator expanded to include women age 41 as of the start of the program year (previously, minimum age was 52)

Year	2002	2003	2004	2005	2006	2007	2008
Never had mammogram in lifetime	19.2%	16.7%	17.6%	15.1%	11.9%	9.1%	9.9%
Sample size of interviewees	222	187	105	164	298	370	289

These BRFSS surveys represent samplings yearly from about 40,000 eligible Filipino women over the age of 40. The 10% improvement from 2002 to 2008 represents about 4000 women who got mammograms for the first time during these 6 years. Hopefully these efforts will produce data showing a down staging of breast cancer at diagnosis in Filipino women over the next several years. It is anticipated that such a decrease in stage at diagnosis will lower the five year mortality rate from breast cancer.

Discussion

The demographic profile of the Filipino population may help to explain the disparity of excess breast cancer mortality in Filipino women in Hawai'i. Filipino migration to Hawai'i began later than the two other major Asian groups in Hawai'i. Contract workers began to arrive from the Philippines to work in Hawai'i's sugar plantations in 1906 and a spurt of migration also occurred following the Second World War. The Immigration Act of 1965 resulted in many Filipinos applying for immigration status and as many as 20,000 immigrants came to the United States. annually for a number of years. Filipino women did not arrive in large numbers until after the Second World War. Therefore, even though Filipino-Americans now make up nearly 15% of Hawai'i's population, over half of the Filipinos in Hawai'i were born in the Philippines. They appear not to be as aware of the importance of cancer prevention and early detection opportunities as the acculturated populations.

Filipino women in the United States have the highest mortality rate due to breast cancer when compared with other Asian women even though they do not have the highest incidence of that cancer. High mortality rates tend to correlate with late diagnosis and the stage at diagnosis is a strong predictor of survival. According to Hawai'i Cancer Facts and Figures 2003-2004 breast cancer was diagnosed at late stages in a higher percentage of Filipino women than Chinese women or Japanese women, and these are the three major Asian groups in Hawai'i.⁵

A possible cause for the late stage at diagnosis in Filipino women may be their relatively low rates of mammography screening. These low rates are identified in the State of Hawai'i BRFSS reports and a low rate of mammography in Filipino women was also identified in a survey of mammography screening compliance within a large health plan in Hawai'i.

Focus groups of Filipino physicians and Filipino women observed that there was a lack of knowledge about the importance of breast cancer screening in this population, of whom over 50% were foreign born. So, the first approach adopted was to develop a broad based

campaign targeting breast cancer screening to Filipino women. This was carried out with the help of radio, television, and print media which serve the Filipino population. Partnerships were developed with the American Cancer Society, the Hawai'i Cancer Information Service, the State of Hawai'i Department of Health, and the Hawai'i Breast and Cervical Cancer Control Program, and multiple Filipino community organizations to publicize and promote breast cancer screening.

After four years of a mammography marketing campaign directed to Filipino women, Filipino community groups, medical facilities that take care of many Filipino women, and the Filipino public, it was observed that the mammography screening rates for the Filipino women in above mentioned large Hawai'i health plan significantly increased each year. Also, Filipino women in Hawai'i who had never had a mammogram decreased from 19.2% to 9.9% from 2002 to 2008, according to State of Hawai'i BRFSS data.⁶ It is felt that an aggressive public campaign can and did improve the mammography rate of an underperforming population.

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Trends in Alcohol Use among Hawai'i Adolescents

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Abstract

It is important to review trends in youth alcohol use over time in order to effectively tailor prevention programs to address those trends. This article reviews data on alcohol use behaviors from the Centers for Disease Control and Prevention's Youth Risk Behavior Survey in Hawai'i from 1993 to 2007. Five alcohol use indicators were examined and stratified by grade level, from 9th grade through 12th grade. Significant drops in nearly all indicators are seen among 9th through 11th graders, but not among 12th graders. This suggests that Hawai'i youth are responding well to anti-alcohol messaging as young teens, but a different approach may be needed to target older teens.

Introduction

Numerous studies have demonstrated a link between early onset drinking and an increased likelihood of problem drinking later in life.¹⁻⁸ Adolescents who begin drinking before age 15 were four times as likely to be alcohol dependent than those who delay drinking until at least age 21.⁹ The deleterious effects of early onset drinking among youth include an increase likelihood of committing crimes, having problems in school, sustaining injuries, incurring motor vehicle crashes, and experiencing deaths. In 2007, the US Surgeon General declared alcohol was the preferred substance used among adolescents more than tobacco or illicit drugs.¹⁰ The prevalence of alcohol use among youth in Hawai'i is lower compared to youth in the U.S. (29.1% vs. 44.7%, respectively), whereas the prevalence of heavy drinking among adults in Hawai'i is higher compared to adults in the U.S. (18.6% vs. 15.8%, respectively).¹¹

Alcohol use is the third leading cause of preventable death in the United States.¹² In Hawai'i, alcohol consumption is the primary attributing factor for motor vehicle accidents, which is the third leading cause of death. Youths who drink and drive were more affected by motor vehicle collisions.^{9,13,14} Also, in 2001-05, out of 132 motor vehicle crashes due to alcohol consumption among persons aged 1-85+, there were 2 deaths among persons aged 10-14, 16 deaths among persons aged 15-19, and 18 deaths among persons aged 20-24.¹⁵ Compared to the United States, in 2001-05, out of 13,819 motor vehicle crashes due to alcohol consumption among persons aged 0 to 65 years-old, the leading number of deaths were 5,540 among persons aged 20-34, followed by 1,584 among persons aged 0-19.¹⁴ The reports from Hawai'i and the United States demonstrate the trend of alcohol attributable deaths start with adolescents and increased when teens drink and drive. Last, mortality from motor vehicle accidents and alcohol use occurred mostly among young adults.

Some measurable outcomes related to youth alcohol use are age of drinking onset, lifetime and recent incidence of alcohol use, and incidence of alcohol-related violence. Thus, understanding and tracking trends in these outcomes over time can aid the establishment of clear alcohol prevention objectives, which are essential to the planning and evaluation of prevention programs. In 2000, the areas

with the highest concentration of Asian and Pacific Islanders (API) (over 25%) included Hawai'i.¹⁶ Honolulu County had the highest proportion of Asians (62%) in Hawai'i. Thus, Hawai'i is a unique state in that the majority of the population comprise of API persons. However, there is limited knowledge on specific rates among API youth, particularly by grade level.

The Healthy People 2010 objectives include increasing the age and proportion of adolescents who remain alcohol and drug free, and reducing the proportion of persons who engage in binge drinking.¹⁷ Therefore, the purpose of the study is to understand the trends of underage drinking in Hawai'i over time, thereby, assisting stakeholders such as public health educators, legislators, and government officials with valuable knowledge that may be utilized to effectively tailor alcohol prevention programs among youth by specific grade level. This study examined data from the Centers for Disease Control and Prevention, Youth Risk Behavior Survey (YRBS), which was administered to 9th to 12th grade students in Hawai'i from 1993-2007.

Method

Data Collection

The YRBS is a biennial, nationwide survey of adolescents, grades 9-12, administered by the CDC as part of their Youth Risk Behavior Surveillance System. The survey was administered in public schools in Hawai'i. The self-reported survey, which was first conducted in 1991, measures the prevalence of a variety of risk factors, including alcohol use and factors relating to alcohol use. A comprehensive description of YRBS procedures is reported elsewhere.¹⁸

The response rates and sample size by year of the YRBS are 63% (n=1,577) in 1993, 62% (n=1,244) in 1995, 63% (n=1,409) in 1997, 60% (n=1,248) in 1999, 60% (n=1,662) in 2005, and 60% (n=1,191) in 2007. The response rates were at least 60% for each year, which is a CDC requirement for the data to be weighted.¹⁹ The respondents were students from 27 public high schools.^{19,20}

Measure

Seven questions related to alcohol use were asked: (1) During your life, on how many days have you had at least one drink of alcohol?; (2) How old were you when you had your first drink of alcohol other than a few sips?; (3) During the past 30 days, on how many days did you have at least one drink of alcohol?; (4) During the past 30 days, on how many days did you have at least five or more alcoholic drinks in a row?; (5) During the past 30 days how did you usually get the alcohol you drank?; (6) During the past 30 days, on how many days did you have at least one drink of alcohol on school property?; and, (7) During the past 30 days, what type of alcohol did you usually drink? Questions 5 and 7 were excluded from the analysis because they were only asked in 2007.

Responses to the remaining five questions were dichotomized into binary outcomes as follows:

- (1) Lifetime use: those who have had at least one drink of alcohol on at least one day during their life versus those who have not (Figure 1);
- (2) Onset age: those who had their first drink of alcohol before age 13 versus those who had their first drink at age 13 or later (Figure 2);
- (3) Current or recent use: those who had at least one drink of alcohol on at least one day during the 30 days before the survey versus those who had not drunk during the previous 30 days (Figure 3);
- (4) Binge drinking: those who had five or more drinks of alcohol in a row, that is, within a couple of hours, on at least one day during the 30 days before the survey versus those who had not (Figure 4); and
- (5) Drinking on school property: those who had at least one drink of alcohol on school property on at least one day during the 30 days before the survey versus those who had not (Figure 5).

Data Analysis

The YRBS website offers an online catalog to compare survey results by region, survey year, and demographic characteristics.²¹ For this analysis, this catalog was used to compare results from all six survey years within each grade level.

For this analysis, comparisons were made for the overall time period from 1993-2007, followed by an assessment of the intervening time periods to determine when the largest change or data trend occurred. Data on alcohol behaviors from the 1993, 1995, 1997, 1999, 2005 and 2007 surveys were compared in order to determine trends over time for the state of Hawai'i. Because data from the 1991, 2001 and 2003 surveys were not weighted, these years were not utilized in our analysis. Overall, trends for Hawai'i have been reported,²⁰ but our analysis stratifies data by grade level in order to tailor effective future objectives to each specific age-group. Significant differences between survey years, and the estimates for Hawai'i including confidence intervals, came from the online catalog for YRBS. Institutional review board approval was granted by the University of Hawai'i at Mānoa for data analysis purposes.

Results

Lifetime Use (Figure 1)

Overall, the lifetime drinking prevalence among Hawai'i youth declined steadily, from 72.8% to 58.7% since 1993 ($p < 0.05$). Among ninth graders in particular, the percentage who reported that they drank at least one alcoholic beverage on at least one occasion in their lives was significantly less in 2007, at 44.6%, than in 1993 (63.4%) ($p < 0.05$). The largest decreases, both overall and among 9th graders, occurred between 1999 and 2005 ($p < 0.05$). However, it is unclear when this decrease may have precisely occurred since data from 2001 and 2003 are unavailable. Although overall lifetime alcohol consumption prevalence declined for grades 10, 11, and 12 as well, these decreases were not significant.

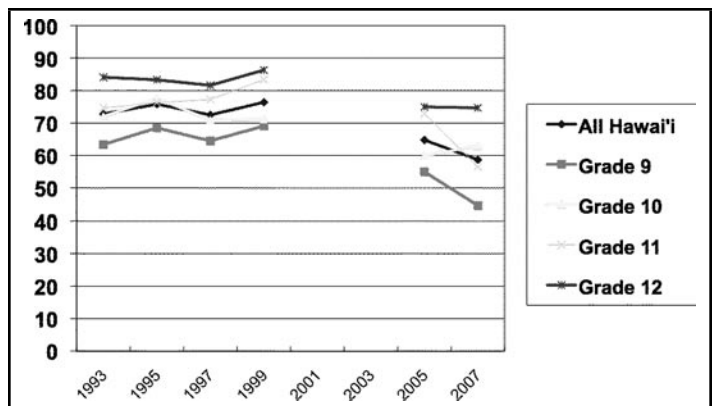


Figure 1.— Lifetime Alcohol Use: Percentage of Students Who Reported at Least One Drink of Alcohol on at Least One Day During Their Life

Note: Data from the 1991, 2001, and 2003 Youth Risk Behavior Surveys were not weighted, thus, are excluded in this study's analysis.

Onset Age (Figure 2)

The proportion of students in the overall sample who reported their first drink of alcohol before age 13 decreased significantly, from 33.8% in 1993 to 21.0% in 2007 ($p < 0.05$). Significant decreases in this measure were also observed in grade 9 (from 43.1% in 1993 to 25.1% in 2007, $p < 0.05$), and grade 11 (from 29.4% in 1993 to 14.2% in 2007, $p < 0.05$). Unlike the other four measures examined in this analysis, 9th graders showed the highest rates, with decreasing rates reported with increasing grade level (except for 1997-1999).

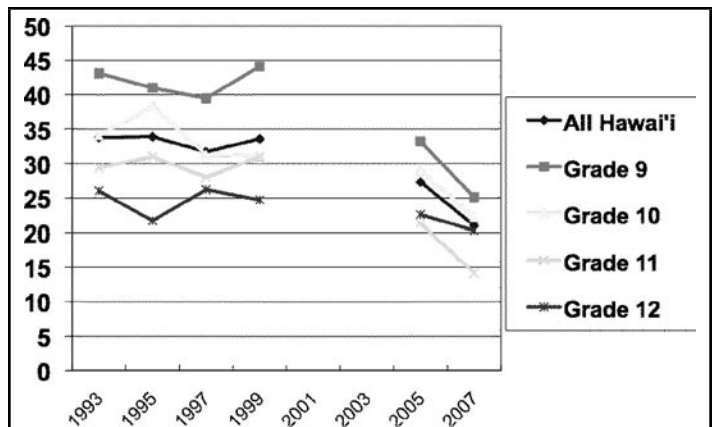


Figure 2.— Percentage of Students Who Reported Drinking Alcohol (other than a few sips) Before Age 13

Note: Data from the 1991, 2001, and 2003 Youth Risk Behavior Surveys were not weighted, thus, are excluded in this study's analysis.

Current and Recent Use (Figure 3)

There was a decreasing trend in the prevalence of current and recent alcohol use in grade 9 whereas there was an increasing trend in the prevalence among 10th graders in 1995 and 1999 and 11th and 12th graders from 1993 to 1999. However, the only group that reported significantly decreased rates of recent alcohol consumption (from 35.6% in 1993 to 19.7% in 2007, $p < 0.05$) was grade 9. Among the overall sample, little difference was seen, with a non-statistically significant decrease from 38.4% in 1993 to 29.1% in 2007. Among 11th graders, a significant decrease in recent alcohol use prevalence was seen from 39.5% in 1999 to 21.8% in 2007 ($p < 0.05$), but this rate is not significantly lower than the rate in 1993 (37.7%).

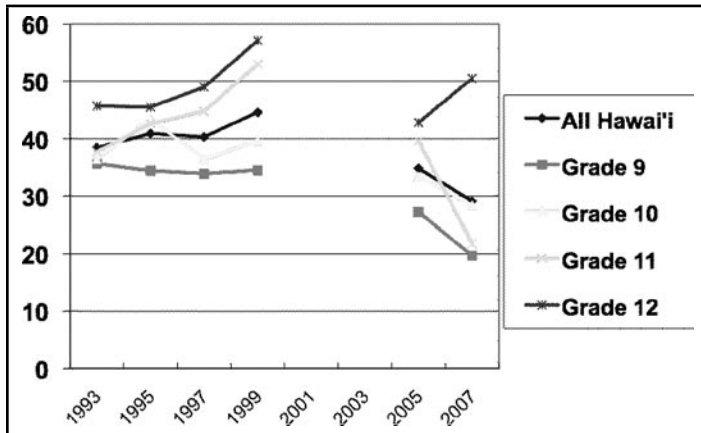


Figure 3.— Current Alcohol Use: Percentage of Students Who Reported Having at Least One Drink of Alcohol on at Least One Day During the 30 Days Before the Survey

Note: Data from the 1991, 2001, and 2003 Youth Risk Behavior Surveys were not weighted, thus, are excluded in this study's analysis.

Binge Drinking (Figure 4)

Although overall binge drinking prevalence among Hawai'i youth dropped from 22.7% in 1993 to 14.9% in 2007, this decrease in trend was not significant. Among 9th graders, however, a significant drop was observed, from 21.3% in 1993 to 5.2% in 2007 ($p < 0.05$). The prevalence of binge drinking among 10th and 11th graders decreased over the 14 year period, but increased slightly among 12th graders; however, the differences were not statistically significant.

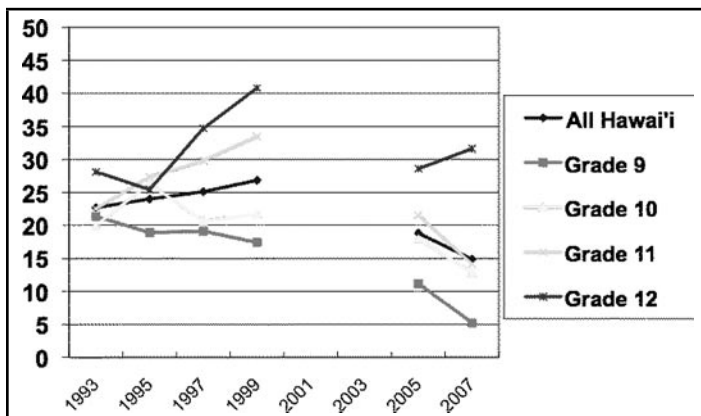


Figure 4.— Episodic Heavy Drinking: Percentage of Students Who Reported Having Five or More Drinks of Alcohol in a Row, that is, within a Couple of Hours, on at Least One Day During the 30 Days Before the Survey

Note: Data from the 1991, 2001, and 2003 Youth Risk Behavior Surveys were not weighted, thus, are excluded in this study's analysis.

Drinking on School Property (Figure 5)

Drinking on school property was the least prevalent of all five alcohol use behaviors among Hawai'i youth, but was also the only measure which increased significantly, albeit only among 12th graders. Youths in 12th grade were the only group in which an upward trend was observed, a steady increase from 3.5% in 1993 to 10.5% in 2007 ($p < 0.05$). Ninth graders reported high rates of recent drinking on school property in 1993 and 1999 at 9.1%; as well as reported the highest rates of recent drinking on school property in 1997, higher than all other grades, at 12.6%. This figure has steadily decreased from this spike to 4.2% in 2007 ($p < 0.05$). The only other notable change was a sharp decline in this behavior among 11th graders, from 8.5% in 2005 to 2.6% in 2007 ($p < 0.05$).

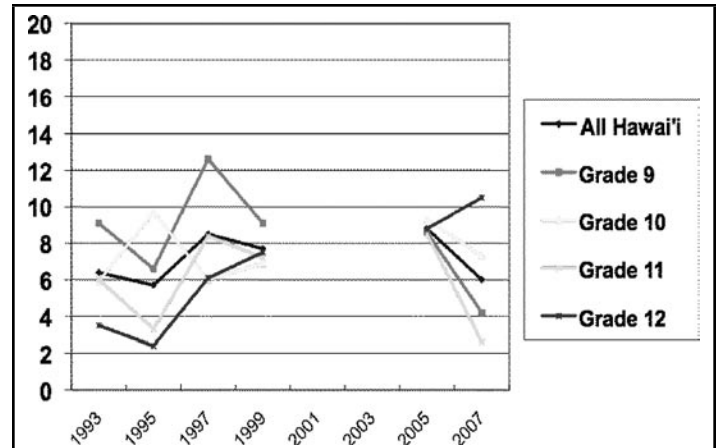


Figure 5.— Percentage of students Who Reported Drinking at Least One Drink of Alcohol on School Property on at Least One Day During the 30 Days Before the Survey

Note: Data from the 1991, 2001, and 2003 Youth Risk Behavior Surveys were not weighted, thus, are excluded in this study's analysis.

Discussion

Prevalence of Drinking

Overall, most alcohol indicators have decreased in prevalence among Hawai'i youth over the past 14 years. The majority of decreases in prevalence across behaviors were seen among 9th graders; in fact, the prevalence of all five drinking behaviors dropped significantly among this group only. This may indicate that programs are targeting younger teens, or that younger teens are more influenced by anti-alcohol messaging than older teens. Another reason may be due to the types of interventions being offered such as the I Mua Mau Ohana's culturally based approach to substance abuse treatment programs for national Hawaiian youth.²² Although not all interventions have been proven to be effective, the majority have had a small to medium impact.²³

The foremost exception to the overall downward trend in all of the adolescent drinking behaviors is among 12th graders, where there was an increased prevalence in the past 30-day drinking and binge drinking since 2005. However, because these increases are not statistically significant, it could likely indicate a leveling out of these rates.

There was a significant increase in drinking on school property among 12th graders in the past 14 years. Although the prevalence of this behavior is low in comparison to other drinking behaviors, it is noteworthy because it may suggest that there is a lack of supervision among this group. It is also interesting that this behavior used to be

more prevalent among 9th graders, but has decreased in popularity among this group while there was an increase seen among 12th graders.

The prevalence of most drinking behaviors increases with grade level. The notable exception is with age of drinking onset, where more 9th graders report having their first drink before age 13, and then the prevalence rates decrease with increasing grade level. This trend has been consistent throughout the past 14 years where the prevalence of early drinking onset has been decreasing since 1993; one plausible explanation for this observed trend is recall bias because 9th graders are closer to the age of 13, they may remember the actual age of their first drink more accurately. Additional analyses are needed, such as a comparison of the average age of onset across grade level, adjusting for age.

Multiple Characteristics of Alcohol Use

Five questions related to alcohol use were examined. However, race, gender, and socio-economic conditions, violence, illicit drug use, smoking, and sexual activity are additional factors that may be related to alcohol use.²⁴⁻²⁸ The co-occurrence of these factors could characterize the multi-dimensionality of the use of alcohol by adolescents, and should be explored in future research.

Comparisons with United States Data

These trends are similar to those seen in the YRBS U.S data.¹² Significant decreases in prevalence were seen in nearly all five measures since 1993, with the exception of current drinking. Furthermore, these decreases occurred primarily among 9th graders (i.e. all five measures were significantly less prevalent in 2007 than in 1993), and less so among 12th graders (only early age of drinking onset was less prevalent over time).

Although Hawai'i's downward trend is consistent with national trends, Hawai'i actually conveys a "better portrait" compared to the general US youth population, specifically in the areas of lifetime alcohol use, recent alcohol use, and binge drinking. With the exception of drinking on school property among 12th graders, significantly fewer 9th, 10th and 11th graders reported participating in these behaviors in Hawai'i compared with 9th, 10th and 11th grades in the general US population. Whereas in Hawai'i, there was an increased prevalence of drinking on school property among 12th graders, the prevalence remained relatively consistent through time among 12th graders in the general US population. In 2007, significantly more 12th graders in Hawai'i reported drinking on school property within the 30 days preceding the survey than 12th graders in the general US population.

Strengths and Limitations

The definition of race has changed over the years. This study is limited in its ability to make valid comparisons over time by race/ethnicity, particularly among API, but still provide a useful examination of alcohol use among Hawai'i's youth who are predominately API.

Also, the YRBS uses a conservative approach to the testing of significance (95% confidence interval).²⁹ This however, allows some level of confidence that the differences observed are indeed true differences.

Furthermore, the data are self-reported. Hence, it is possible that there is underreporting of alcohol use, especially given the high proportion of API. API persons may be less likely to report undesirable behaviors due to shame and loss of face –factors that are particularly salient in API cultures.^{30,31} However, Brener, Billy and Grady (2003) conducted a review of the literature and concluded that though situational and cognitive factors affect the validity of self-reported data, "these factors... do not threaten the validity of self-reports" and "the importance of assessing health-risk behaviors as part of research activities involving adolescents necessitates the use of self-report measures."³²

The YRBS data are restricted to public school students; thus, the conclusions of this study are limited to only public (vs. private or home-schooled) school students. Also, the small sample size prevents the ability to conduct additional analyses (the YRBS do not report subgroup findings if the cell size is <100 students²⁹).

Recommendations

To the authors' knowledge, there are no specific anti-alcohol messaging interventions that target older teens; however, interventions targeting youths and incoming college freshman have shown to be effective. For example, one community and school intervention included a workshop and presentation with one underage drinking video, and distributed handouts, and incorporated group discussions between youths and adults.³³ The objective of the program was to increase awareness about the problem of underage drinking, increase viewers and participants' knowledge, and encourage discussion about underage drinking. The results showed that legal consequences of underage drinking were not common knowledge, and that a well-designed one-time program can be efficient.

Another study examined the effectiveness of two e-Interventions, AlcoholEdu and The Alcohol eCHECKUP TO GO (e-Chug), in reducing and preventing both alcohol use and alcohol-related consequences for incoming college freshmen students.³⁴ AlcoholEdu is a 3-hour educational program that utilizes multimedia presentations and focuses on three content areas: first, presenting social pressures, injunctive alcohol norms, alcohol advertising, and biopsychosocial consequences of binge drinking; second, providing information about the physiological effects of alcohol; and third, suggesting ways for safer drinking. e-Chug is a brief 20 minutes alcohol e-Intervention, which focuses on three main areas: first, providing students with personalized normative feedback such as using text and illustrations to present the amount of alcohol consumed, estimated annual monetary cost of the alcohol consumed, estimated blood alcohol content, and negative alcohol-related consequences; second, presenting three short videos about standardized drink definitions, blood alcohol content, and the biphasic response curve; and third, containing a list of safer-drinking strategies and a referral list of local and national resources. Participants who received the AlcoholEdu intervention had significantly fewer lower alcohol-related consequences than assessment-only controls, while a trend showed reduced consequences in participants who received e-Chug versus assessment-only. The Internet-based intervention for incoming college freshmen suggested that the program may be useful to schools with limited resources.

Study Implications/Next Steps

These intervention findings may be used to design culturally appropriate and age specific alcohol prevention programs among older teens. The design of the intervention tailored to older teens may include family involvement and discussion or an Internet-based intervention in reducing the likelihood of alcohol use during the start of a teen's first year in college. A key area for further research is to determine whether in-person intervention or e-Intervention would be culturally appropriate among API.

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Hawaiian proverb: "A good surfer will not get wet."



Medical Student Research at the John A. Burns School of Medicine (JABSOM): The Research Interest Group

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In medical education, the role of research is not well understood. Institutions greatly differ in the amount of emphasis placed on medical research. While most institutions believe that medical student research is an important part of medical education, generalization is difficult because of the differences in the types of research experiences available to students.¹ Some medical schools offer research as summer electives; others mandate a more extensive and formal research experience.^{2,3} Some focus on primary care; others focus on translational science.^{4,6} A consistent observation is that student involvement in research during medical school has a positive effect on students' educational experience.⁶⁻⁸ This article describes student research at John A. Burns School of Medicine (JABSOM) and the students' efforts to support it.

JABSOM has a tradition of primary-care oriented clinical education and community outreach. Additionally, there are opportunities for students to pursue academic endeavors.⁹ Since the implementation of Problem Based Learning (PBL) in 1989, JABSOM students have had the option to conduct research through an elective course. During the terms of Dr. Edwin Cadman as dean (1999 to 2005) the amount of biomedical research at JABSOM increased dramatically. This was reflected by a ten-fold increase in NIH grants.¹⁰ In accordance, a greater emphasis was placed on research in the medical student curriculum.

In 1999, a group of students led by Bill Johnson, MS I, created a course dedicated to research. Their goal was to ensure that all students had exposure to research. This effort resulted in the establishment of a summer course between the first and the second year known as the Student Research Project. In this required course, a student identified an active researcher, initiated a research project, and participated in one or more research projects. The Student Research Project was recently replaced by elective research opportunities to provide the students with more flexibility. Concurrently, a fourth year student, Thomas Sanford, began an "interest group" to support student research. In the fall of 2009, the JABSOM Research Interest Group was founded.

The initial objective was to increase first year student involvement in research. The most common barrier to early involvement in research was a lack of awareness of research opportunities at JABSOM. To help resolve this issue, information available through past student experiences, on-line resources, and data from the Office of Medical Education was compiled into a single database of JABSOM Principle Investigators (PI). The database was searchable by PI, subject, or specialty. The database was distributed to all students who expressed interest in research. A mentorship program was established whereby first year students were paired with a fourth year student who was knowledgeable about research at JABSOM. The efforts to involve students early have resulted in many positive

student-researcher relationships. Some of the projects JABSOM students are conducting with JABSOM researchers include:

- Ras Pathways in Non-Melanoma Skin Cancer
- Dysnatremias and Fluid Volume as Predictors of Mortality in the Intensive Care Unit
- Retinopathy and Neonates
- Own the Bone (Osteoporosis)
- Hepatitis B core antibody in Renal Transplant Patients
- Effect of education and minimization of narcotic use on postoperative pain, following elective breast augmentation surgery
- Six2 Gene expression in nephrogenesis of fetal mice

The second objective was to support research-related educational activities. With the guidance of a faculty mentor, Dr. Steven Ward from the Institute of Biogenesis Research, a new lecture series titled the "Translational Research Seminar" was initiated. Two researchers were invited to each seminar: an expert in laboratory science and a clinician. Different perspectives of the two speakers promoted lively discussions about the current technical issues and the clinical relevance of novel diagnostic and therapeutic agents. The seminars were well-attended and positive feedback from lecturers, faculty, and students was received. The Research Interest Group also began collaborating with a group of first year students who began a journal club. Finally, a repository of extramural research opportunities for summer internships and year-long research fellowships was developed.

The Research Interest Group recently conducted an informal internet survey to identify areas where improvement may be necessary in the future. The survey consisted of 10 questions relating to the attitudes of students toward research, resources, as well as the productivity of research experiences. The survey was sent to all 252 JABSOM students and 83 students responded (35%). Most students reported experience with research prior to enrolling at JABSOM (83%), and the majority (70%) reported conducting research at JABSOM. The rate of participation in research was disproportionate to other measures of academic productivity: 27% of students report presenting research at an academic conference and 24% are listed as a co-author on a publication with a JABSOM researcher. Of the students who had not conducted research (N=25), lack of time (N=10) and lack of resources (N=9) were the most common reasons cited. Four of the responders (7%) reported that they were not interested in research. Forty-two percent of JABSOM students reported that they did not have adequate research-related resources. So, it appears that students are generally interested in research, but do not feel they have the resources to find research that interests them.

The experiences during the first year of the Research Interest Group have solidified the positive aspects of students as research advocates. Student participation in research can be an important part of a complete medical education. Most students who conduct research in medical school report improved understanding of research fundamentals and improved proficiency in critically evaluating the literature.^{11,12} Furthermore, students who have exposure to comprehensive research projects during medical school are more likely to conduct research in the future, and are more likely to specialize in the area of their research.^{4,13} The authors neither seek to mandate any specific type of research experience, nor to create interest in research where none currently exists. It is noted that most JABSOM students were involved in research prior to medical school, and the authors believe that vast majority have an innate interest in research. The primary purpose of the Research Interest Group is to serve as a repository of resources to guide students so that they may conduct research in their area of interest. Students have expressed that there is a need for more clinical and populational research. Moving forward, a top priority will be to increase the students' understanding of the clinical and populational research currently being conducted in Hawaii so that more opportunities in this domain can be created. Furthermore, in the tradition of JABSOM, the Research Interest Group will work to increase the opportunities available for research in primary care and community outreach.

In JABSOM's problem-based learning (PBL) curriculum, students rely on each other to contribute to each other during small tutorial sessions. Consequently, a student-led group may be effective in supporting student research at JABSOM. However, faculty participation is vital for any student research experience. Research creates an opportunity to connect students and faculty members in a way that will benefit both parties. Faculty are invited to view the website (www.jabsom-rig.com) and faculty researchers interested in working with students are encouraged to contact the authors. Students who were able to complete meaningful research projects during medical school can attest to the substantial impact that faculty have made on the students' journey to become physicians.

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Hawaiian proverb:
“If you plan for a year, plant kalo.
If you plan for ten years, plant koa.
If you plan for one-hundred years, teach the children.”



Recent Developments in Cigarette Smoking Cessation

Thaddeus Herzog PhD

Although cigarette smoking remains an enormous health problem, great progress has been made in tobacco control over the past 40 years. The clearest evidence of this progress is that the current US adult smoking prevalence is less than half the rate that it was in the 1960s.¹ There are many reasons for the decline in smoking prevalence. One reason is a change in culture whereby smoking is seen by most people as an undesirable and unhealthy lifestyle choice. This change in how smoking is perceived is a significant public health achievement. Another contributor to declining smoking rates is the ongoing improvement in smoking cessation techniques and medications. More is now known about how to help smokers to quit, and the variety and quality of smoking cessation services and medications has increased.

The current article is divided into two parts. The first part is an update and summary of current evidence-based smoking cessation techniques and medications, based upon the recently published Clinical Practice Guideline *Treating Tobacco Use and Dependence: 2008 Update*.² The updated Clinical Guideline was sponsored by a consortium of eight federal and nonprofit organizations, and reflects the synthesis of more than 8,700 research articles. The second part of this article discusses the often neglected topic of unplanned “cold turkey” smoking cessation.

Clinical Practice Guideline Treating Tobacco Use and Dependence: 2008 Update

The Clinical Practice Guideline is the consummate source of information regarding contemporary smoking cessation techniques and medications. However, it is a very lengthy document at 256 pages. The current article summarizes a few of the most important recommendations emphasized in the Clinical Guideline. Readers are encouraged to access the Guideline for more detail regarding specific topics of interest (http://www.surgeongeneral.gov/tobacco/treating_tobacco_use08.pdf). The five most important recommendations in the Guideline are as follows:

1. Cigarette smoking and tobacco dependence usually require multiple cessation attempts before long-term abstinence is achieved. Clinicians and smokers should not be discouraged by any individual unsuccessful attempt to quit smoking. There are many different treatments now available, so smokers should be encouraged to keep trying to quit and to try different cessation methods as appropriate to their medical status.

2. Clinicians and other medical professionals always should assess for smoking status and treat every tobacco user. Even a very brief intervention can have an effect. The vast majority of smokers have at least some interest in quitting.³ Therefore, timely information and encouragement from a clinician can have an effect.

3. Counseling for smoking cessation can take a variety of forms. Group counseling with multiple smokers is effective. Individual counseling and telephone counseling also are effective. The most important ingredients of counseling are (a) practical advice about how to quit smoking, and (b) social support and encouragement for the cessation attempt.

4. There are many effective medications available for smoking cessation. Each of these medications has different strengths, weaknesses, and potential side effects. Some of these medications can be taken in combination, whereas other combinations are not recommended. The Clinical Guideline provides details regarding various combinations of medications. There are five types of nicotine replacement therapies: gum, inhaler, lozenge, nasal spray, and transdermal patch. Each of these products is designed to reduce craving for smoking by providing nicotine to the body without smoking. In addition to nicotine replacement therapies, there are two non-nicotine products that are taken in pill form: Bupropion SR and Varenicline. All of the products mentioned in this section increase the probability of sustained smoking abstinence.

5. Counseling and medications are most effective when combined. Thus, for optimum results, clinicians should recommend a combination of counseling and medications whenever possible.

Unplanned “Cold Turkey” Quitting

The Clinical Practice Guideline provides comprehensive advice regarding available treatments for tobacco dependence. However, the majority of ex-smokers quit smoking without counseling and without medications.⁴ Thus, it is important for clinicians to understand that smokers might quit “on their own.” Recent research has illuminated this issue of unplanned or “cold turkey” quitting. These studies reveal that smoking cessation is often a sudden, unplanned event.⁵⁻⁷ Each quitter’s experience is different, but usually there is some event in a smoker’s life that causes that person to quit smoking suddenly. In many cases, the smoker already was struggling with the idea of quitting smoking, but had no specific plan regarding how or when to quit smoking.³

The phenomenon of sudden, “cold turkey” quitting has implications for clinicians treating smokers. First, it is important to realize that all smokers, even those who profess no plans of quitting, could become quitters at any time. This is an additional reason why physicians should assess and discuss a client’s smoking wherever possible. One can never know when a brief piece of advice or feedback regarding a client’s smoking could trigger a quit attempt.

Second, it is helpful to inform smokers about the phenomenon of sudden, unplanned smoking cessation, so that they will be ready to “seize the moment,” should they experience a sudden motivation

to quit smoking. In short, if a smoker has a sudden desire to make a quit attempt, they should be encouraged to quit without delay. These moments of high motivation represent excellent opportunities for cessation. In fact, research has shown that unplanned cessation attempts are, on average, more successful than planned cessation attempts.⁵⁻⁷ Smokers can seek additional assistance such as counseling and nicotine replacement therapy after the cessation attempt is underway.

Conclusion

Our understanding of how to help smokers to quit has increased markedly over the past 40 years. There now are many effective options for smokers who want to quit. At the same time, there is no one right way to quit smoking. Smokers and clinicians should work together to find the appropriate strategy for each smoker. In addition, smokers and clinicians should be alert to the possibility of unplanned “cold turkey” cessation attempts, and should seize these moments of high motivation to quit as opportunities for sustained smoking abstinence.

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A Brief Description of the Bethesda System for Reporting Thyroid Fine Needle Aspirates

Malcolm Schinstine MD, PhD, FCAP; Pan-Pacific Pathologists, LLC

Abstract

Fine needle aspiration has become the most prominent, and the easiest way, to morphologically evaluate lesions of the thyroid. When done correctly, the sensitivity and specificity of thyroid aspirates for detecting malignancy is very high. Unfortunately, clinicians are sometimes confused by the terminology used in thyroid cytopathology reports. One way to mitigate confusion is for all pathologists to use the same diagnostic criteria and terminology. Standardized terminology for thyroid cytopathology reports has recently been proposed. The following article introduces the concept of the Bethesda System for reporting thyroid aspirates. Sample diagnoses are given to illustrate how thyroid cytopathology reports may appear using the Bethesda System.

Introduction

Fine needle aspiration (FNA) has become the accepted way to initially evaluate thyroid lesions because it is relatively easy to collect a specimen and also because it is safe.¹ The role of the pathologist, if he/she is not doing the aspiration, is to render accurate, succinct, and understandable diagnoses so a correct therapeutic strategy or intervention can be pursued. In most cases, the cytology report communicates a clear diagnosis and the correct intervention, if one is required, is initiated. Unfortunately, sometimes reports use vague or non-committal language (e.g., “compatible with a follicular lesion”) that can lead to clinical uncertainty, and in the worst cases, utter frustration. Much of this is due to different pathologists using different terminology and diagnostic criteria. Other times, a pathologist may be uncomfortable interpreting thyroid aspirates and their level of discomfort is reflected by a vague diagnosis. It appears the areas of a report causing the majority of the problems are: 1) understanding what constitutes an adequate specimen for evaluation and 2) understanding what the thyroid cytopathology report is trying to say.²

Many of the problems associated with understanding thyroid FNA reports could be mitigated if consistent criteria and a standardized reporting system were used. To this end, in October of 2007, a group of clinicians and pathologists gathered at the National Cancer Institute in Bethesda, MD to discuss various aspects of thyroid cytopathology. The topics discussed included: 1) indications for thyroid FNA, 2) training for the performance of thyroid FNA, 3) techniques for thyroid FNA, 4) utilization of ancillary studies, and 5) post-thyroid FNA testing. The sixth topic covered, and the subject of this article, discussed diagnostic terminology and the morphological criteria used to make particular diagnoses. The end result of the conference was summarized in a series of articles in *Diagnostic Cytopathology*³ and in the publication of a book entitled “The Bethesda System for Reporting Thyroid Cytopathology. Definitions, Criteria and Explanatory Notes.”⁴

Reference	Adequacy Definition
(4, 5)	5-6 groups of well-preserved follicular epithelial cells with 10 or more cells per group
(6)	6 groups of follicular epithelial cells on at least 2 of 6 slides
(7)	10 large clusters of follicular epithelial cells with more than 20 cells per group

Definition of Adequacy

In order for a pathologist to render a diagnosis, there must first be sufficient (adequate) material for interpretation. This seemingly logical statement is a cause of confusion for many clinicians, and even some pathologists. The definition of what qualifies as an adequate aspirate has varied over the years (Table 1). Moreover, what constitutes an adequate specimen depends on the nature of the lesion. A large, solid lesion would be expected to yield a more cellular aspirate as compared to a cystic lesion. The definition of adequacy according to the current Bethesda System recognizes the difference in yield of follicular cells with regard to the type of lesion aspirated. For a solid nodule, a specimen is considered adequate if it contains at least 6 well-preserved and well-stained follicular groups containing at least 10 cells.⁴ It is preferred the follicular groups all be contained on the same slide.

In contrast, abundant thick colloid, as found in a colloid nodule, does not have a requirement for a minimum number of follicular cells. Similarly, the interpretation of thyroiditis (e.g., Hashimoto’s thyroiditis, granulomatous thyroiditis, thyroid abscess) does not have a requirement for a minimum number of follicular cells. Thyroid cysts containing histiocytes, but with little or no follicular cells, should be considered non-diagnostic and interpreted as “cyst fluid only.” There is no strict requirement for a minimum number of thyroid follicular cells for these lesions. A comment stating a cystic-type carcinoma cannot be ruled out may be added (i.e., you cannot make a diagnosis of papillary carcinoma in the absence of follicular cells!). It should be emphasized an aspirate smear containing significant cytologic atypia is *NEVER* considered inadequate, regardless of cellularity. It should also be understood a diagnosis will not be proffered if an aspirate is deemed inadequate. Adequacy criteria that are too lenient most likely will result in a high false negative rate. Conversely, overly stringent criteria will result in an unacceptably high inadequacy rate and may cause unneeded patient anxiety.

Finally, it should also be understood the person who is procuring the thyroid aspirate, be it a radiologist, endocrinologist, family practitioner, or pathologist, is the one *primarily* responsible for providing adequate material for interpretation. An individual’s inadequacy rate should be well below 15%.⁸ An individual with an unacceptably high inadequacy rate may show a reduction in the inadequacy rate if a

cytotechnologist or pathologist is available to assess adequacy at the time the aspiration is obtained.⁹ Those physicians who continually exceed the maximum acceptable inadequacy rate should be offered additional training.

As important as it is to understand what constitutes an adequate sample, it is equally important to understand what constitutes an inadequate, or in the terminology of the Bethesda System, a non-diagnostic or unsatisfactory, thyroid FNA.⁴ Understanding why a pathologist has rendered a non-diagnostic/unsatisfactory diagnosis may help to prevent potentially unpleasant misunderstandings. At the same time, it is the responsibility of the pathologist to clearly explain why the aspiration is non-diagnostic.

According to the Bethesda System, a non-diagnostic/unsatisfactory thyroid FNA aspirate is a *solid nodule* where there are less than 6 groups of thyroid follicular cells composed of 10 or more cells. In addition, poor cell preservation and/or contamination by obscuring blood or ultrasound gel may warrant a diagnosis of non-diagnostic/unsatisfactory. Finally, as mentioned above, an aspirated thyroid cyst should also be signed out as non-diagnostic.

Diagnostic Terminology

Now we arrive at the meat of the matter and the cause of indigestion for many clinicians perplexed by a thyroid FNA report. The diagnostic terminology used by pathologists varies from pathologist to pathologist and from institution to institution. The inconsistency in the reports is what leads to clinical confusion. There have been several attempts to standardize the thyroid FNA report.^{8,10} The Bethesda System is the latest attempt to standardize FNA cytopathology reports.⁴

The following is a summary of the diagnostic categories proposed by the Bethesda System. It is beyond the scope of the current article to detail all the cytologic criteria used to properly place an aspirate into the correct diagnostic category. With this in mind, the general categories recommended by the Bethesda System are 1) non-diagnostic or unsatisfactory (described previously), 2) benign, 3) atypia of undetermined significance (or follicular lesion of undetermined significance), 4) follicular neoplasm (or suspicious for a follicular neoplasm), 5) suspicious for malignancy and 6) malignant. Of note, comments or recommendations are not required in the Bethesda System, but may prove useful in certain circumstances. Thus, the use of comments or recommendations is left to the discretion of the pathologist.

I. Benign

Most thyroid nodules are benign (approximately 65% of cases), so this should be the most commonly used category (11). This category includes adenomatoid/hyperplastic nodules, colloid nodules, nodules associated with Grave's disease, and thyroiditis (e.g., Hashimoto's (lymphocytic) thyroiditis and granulomatous thyroiditis). The risk of malignancy in this group of diagnoses is approximately 0-3% with a false negative rate between 1-10%.⁴

Patients with a categorically benign diagnosis are usually followed clinically with ultrasound evaluation, if deemed necessary. Follow up is usually at 6 to 18 month intervals for at least 3 to 5 years subsequent to the initial diagnosis. Repeat FNA is recommended for nodules showing rapid growth or ultrasound abnormalities (e.g., microcalcifications or irregular margins).

Sample Reports

- 1) Benign
Benign thyroid nodule, consistent with colloid nodule
- 2) Benign
Consistent with lymphocytic (Hashimoto's) thyroiditis
Comment: The findings are consistent with lymphocytic (Hashimoto's) thyroiditis in the proper clinical setting.

II. Atypia of Undetermined Significance/ Follicular Lesion of Undetermined Significance

This category should be used sparingly. Specimens placed into this category should contain cells (follicular, lymphoid, other) exhibiting architectural and/or cytologic atypia. This category may also be used if obscuring blood, excessive preparation artifact, or ultrasound gel somewhat compromise interpretation of the aspirate. If, however, an aspirate cannot be interpreted because of preparation artifact or obscuring material it should be diagnosed as non-diagnostic. The use of "Follicular Lesion of Undetermined Significance" may be used when the atypia is follicular (i.e., architectural) and not cellular. The risk for malignancy in this category is approximately 5-15%.⁴

A comment or recommendation most often accompanies specimens placed in this category to describe the source of the atypia and the reason why a more definitive diagnosis cannot be rendered. A suggested course of action may also be provided (i.e., suggest re-aspiration if clinically indicated).

The recommended management for patients placed in this category is repeat FNA and correlation with other radiographic and clinical findings. Re-aspiration leads to a more definitive diagnosis in 75-80% of cases.⁴

Sample Report

- 1) Atypia of Undetermined Significance
Follicular cells, mostly benign appearing, with rare cytologic atypia
Comment: A repeat aspirate after an appropriate interval may be helpful if clinically indicated.

III. Follicular Neoplasm/Suspicious for Follicular Neoplasm

This category refers to cellular thyroid aspirates comprised primarily of follicular cells exhibiting significant cellular crowding and/or microfollicle (microacinar) formation. Cellular aspirates composed primarily, or exclusively, of Hurthle cells are designated as "Suspicious for Follicular Neoplasm, Hurthle Cell Type." Specimens exhibiting features of a papillary carcinoma are *not* included in this category. The risk for malignancy in this group of lesions is approximately 15-30%.⁴

The management of this category of thyroid lesions is usually surgical. Most patients with lesions in this category undergo hemithyroidectomy or lobectomy.

Sample Reports

- 1) Suspicious for a follicular neoplasm
- 2) Suspicious for a follicular neoplasm
Comment: Cellular aspirate composed primarily of follicular cells exhibiting a microacinar architecture.
- 3) Suspicious for a follicular neoplasm, Hurthle cell type

IV. Suspicious for Malignancy

These aspirates exhibit some of the features of malignancy, but diagnostic changes may be rare or otherwise ill defined. The malignancy considered most in this category is papillary carcinoma. Other malignancies usually covered by this category include medullary thyroid carcinoma, lymphoma, and metastatic malignancies. Although entities such as anaplastic carcinoma are usually easily identified, a paucity of diagnostic cells or poor cellular preservation may be cause for equivocation. The risk for malignancy in this category is approximately 60-75%.⁴

Patients within this diagnostic category are usually candidates for surgical intervention. Intraoperative frozen section may be used in an attempt to further elucidate the nature of the malignancy and to help decide the extent of the surgery. For example, a diagnosis of papillary carcinoma will most likely lead to total thyroidectomy, especially if the lesion is greater than 4 cm.¹² Ancillary tests, including serum calcitonin or flow cytometry, may prove useful for patients suspected of medullary thyroid carcinoma or lymphoma, respectively. In addition, immunocytochemical studies may be needed to characterize the phenotype of metastatic malignancies.

Sample Report

- 1) Suspicious for malignancy
Suspicious for papillary carcinoma

V. Malignant

The final category is self-explanatory. This category includes malignancies exhibiting the diagnostic features characteristic of a given malignancy (e.g., papillary carcinoma, medullary carcinoma, metastatic carcinoma). The risk for malignancy is 97-99%.⁴ Surgical intervention is recommended for patient diagnosed with papillary carcinoma. The extent of the surgery, lobectomy versus total thyroidectomy, depends on several factors (i.e., size of the lesion, patient's age, sonographic appearance of the lesion).

Sample Report

- 1) Malignant
Papillary thyroid carcinoma

Conclusion

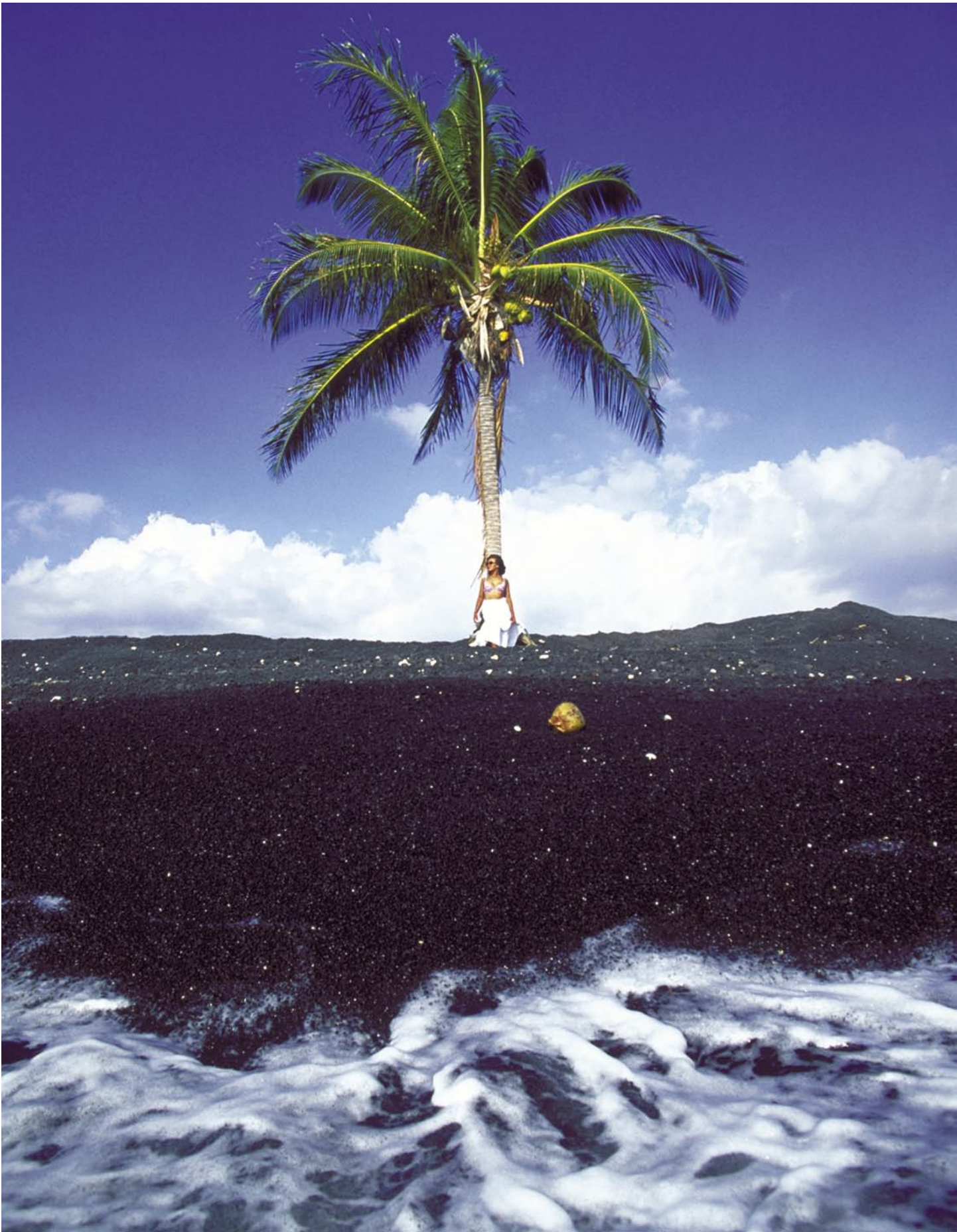
In summary, it is with much hope that this article will prove useful to clinicians and pathologists alike. The clinician must understand there are specific criteria and cytologic features guiding the pathologist to make a given diagnosis. The pathologist must understand that the thyroid FNA report must be as specific and as clear as possible. There are criteria governing the definition of an adequate specimen, as well as, a given diagnosis. Within a pathology group or an institution, the diagnosis, as well as the criteria used to make the diagnosis, should be as standardized as possible. Deviation from a standardized report is permitted but should be accompanied by an explanatory note or comment.

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Hawaiian proverb:

“The Lehua blossom unfolds when the rains tread on it.”



UPCOMING CME EVENTS

Interested in having your upcoming CME Conference listed? Please contact Nathalie George at (808) 536-7702 x103 for information.

Date	Specialty	Sponsor	Location	Meeting Topic	Contact
August 2010					
8/2-8/6	AN	Dannemiller	Sheraton Maui Resort, Maui	Hawai'i Anesthesiology Update 2010	Tel: (800) 328-2308 Web: www.dannemiller.com/live-events
8/10-8/13	EM	University of California, Davis School of Medicine	Grand Wailea, Maui	Emergency Medicine Update: Hot Topics 2010	Tel: (916) 734-5390 Web: cme.ucdavis.edu/conferences
September 2010					
9/3-9/4	Multi	Cancer Research Center of Hawai'i and Hawai'i Consortium for Continuing Medical Education	Four Seasons Resort Hualalai, Kona, Hawai'i	13th Annual West Hawai'i Cancer Symposium	Tel: (808) 987-3707
9/28-10/2	NRN	Western Neuroradiological Society	Fairmont kea Lani, Maui	42nd Annual Meeting	Web: www.wnrs.org
October 2010					
10/3-10/7	PMM	Ironman Sports Medicine Conference	Royal Kona Resort, Kailua-Kona, Hawai'i	22nd Annual Ironman Sports Medicine Conference	Tel: (877) 843-8500 Web: www.cmtravel.com
10/17-10/22	Multi	Scripps Conference Services & CME	Kaua'i Marriott Resort & Beach Club, Kaua'i	9th Annual Destination Health: Renewing Mind, Body and Soul Email: med.edu@scrippshealth.org	Tel: (858) 652-5400 Web: www.scripps.org/conferenceservices
10/23-10/29	U	Western Section of the American Urological Association	Hilton Waikoloa Village	86th Annual WSAUA Meeting	Web: http://www.wsaua.org/hawaii2010/2010.htm
10/31-11/5	R	University of California, San Francisco	The Fairmont Kea Lani, Wailea, Hawai'i	Abdominal and Thoracic Imaging on Maui	Tel: (415) 476-4251 Web: www.cme.ucsf.edu
November 2010					
11/1-11/5	AN	California Society of Anesthesiologists	Mauna Lani Resort & Spa, Kailua-Kona, Hawai'i	2010 CSA Fall Hawaiian Seminar	Web: www.csaqh.org
11/7-11/10	R	Department of Radiology, Duke University	Hyatt Regency Maui, Ka'anapali Beach, Maui	A Comprehensive Review of Musculoskeletal MRI	Web: www.radiology.duke.edu
11/15-11/17	PD	Lucile Packard Children's Hospital	Mauna Lani Bay Hotel, Kohala Coast, Hawai'i	Popular Pediatric Clinical Topics	Web: www.lpch.org/CME/Courses
11/20	Multi	Hepatitis Support Network of Hawai'i and Hawai'i Consortium for Continuing Medical Education	Queen's Conference Center	Viral Hepatitis in Hawai'i - 2010	Tel: (808) 538-2881 Web: www.hepatitis.IDLinks/symposium2010
January 2011					
1/16-1/19	ORS	Vindico Medical Education	Grand Hyatt Kaua'i	Orthopedics Today Hawai'i 2011	Web: www.othawaii.com
1/16-1/21	OPH	Vindico Medical Education	Hyatt Regency Maui, Ka'anapali Beach, Maui	Retina 2011	Web: www.retinameeting.com
1/16-1/21	OPH	Vindico Medical Education	Hyatt Regency Maui, Ka'anapali Beach, Maui	Hawaiian Eye 2011	Web: www.osnhawaiianeye.com
1/24-1/28	AN	California Society of Anesthesiologists	Mauna Lani Resort & Spa, Kailua-Kona, Hawai'i	2011 CSA Winter Hawaiian Seminar	Web: www.csaqh.org

February 2011					
2/13-2/18	R	University of California San Francisco School of Medicine	Fairmont Orchid, Kohala Coast, Hawai'i	Neuro and Musculoskeletal Imaging	Web: www.cme.ucsf.edu/cme
2/16-2/20	EM	University of California San Francisco School of Medicine	Marriott Ihilani Resort & Spa, O'ahu	High Risk Hawai'i 2011	Web: www.retinameeting.com
2/19-2/20	OTO	University of California San Francisco School of Medicine	Moana Surfrider Hotel, Waikiki, O'ahu	American College of Surgeons Thyroid and Parathyroid Ultrasound Skills-Oriented Course	Web: www.osnhawaiianeye.com
2/19-2/22	OTO	University of California San Francisco School of Medicine	Moana Surfrider Hotel, Waikiki, O'ahu	Pacific Rim Otolaryngology Head and Neck Surgery Update	Web: www.csahq.org
2/20-2/25	IM	University of California San Francisco School of Medicine	Fairmont kea Lani, Maui	Infectious Diseases in Clinical Practice: Update on Inpatient and Outpatient Infectious Diseases	Web: www.csahq.org
March 2011					
3/13-3/18	Multi	Mayo Clinic	Mauna Lani Bay Hotel, Kohala Coast, Hawai'i	14th Mayo Clinic Endocrine Course	Web: www.mayo.edu/cme
3/20-3/23	GS	University of California San Francisco School of Medicine	Wailea Beach Marriott, Maui	Postgraduate Course in General Surgery	Web: www.cme.ucsf.edu/cme
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
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					
10/24-10/28	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

Upcoming in the Journal

Hydroxycut® (herbal weight loss supplement) Induced Hepatotoxicity: A Case Report and Review of Literature

Diffuse Plexiform Neurofibroma of the Back: Report of a Case

Racial/Ethnic Differences in the Incidence of Kawasaki Syndrome among Children in Hawai'i



❖ GENEROUS ORGAN DONORS PUT THEIR HEART INTO IT.

A 50-year-old woman had a stroke at home, was brought to the hospital, and found to be brain dead. Her organs were removed for transplant and a 37 year-old diabetic man with kidney failure received one of her kidneys. He had been waiting five years for a transplant. Two months after the operation the Harvard-trained surgeon found out the donor actually died of uterine cancer, and it is alleged that he told the patient “don’t worry about it.” The attorney for the surgeon stated that he thought long and hard about it, but did not remove the kidney. The patient did not fare well after the surgery, and he was told he was having trouble adapting to his new kidney. Seven months after the transplant operation the patient died. Autopsy revealed that the man died of uterine cancer which he contracted from the donor tissue. The hospital attorney admitted that there were several recipients of tissue from the deceased woman, so it is possible that a second or third shoe will eventually drop. The legal vultures are circling overhead.

❖ HERE’S LOOKING AT YOU, KID.

It is a painful fact that so many seemingly intelligent young people get into binge drinking while trying to navigate young adult years. The latest craze, which is indeed a form of peer pressure lunacy, is vodka imbibition through the eyeball. Binge parties are sometimes highlighted by holding a bottle of vodka against the open eye and soaking up 40% alcohol through the mucus membrane, the exposed cornea and the tear ducts. It is painful, but the players claim that they get a very rapid high, although they must be three-sheets to the wind before the insane escapade. Corneal damage is real and can be permanent as the epithelium peels away, the corneal stroma becomes edematous and the inflammation is carried into intra-ocular structures. What price for a “quick rush!”

❖ SOME ANIMALS ARE MORE EQUAL THAN OTHERS. (ORWELL)

What is sauce for the goose (lawyers) is not sauce for the gander (physicians). The overboard “red flag” rule of the Federal Trade Commission (FTC) requires physicians and other health care professionals to notify proper authorities with any suspicion of identity theft. The American Bar Association brought litigation challenging the ruling, and the U.S. District Court for the District of Columbia found that the FTC exceeded its authority in enforcing the rule against lawyers. In January, the American Medical Association petitioned the FTC to refrain from enforcing the rule against the health care industry, citing the ruling by the District Court, but the commission said Congress did not grant it the power to authorize such an exemption. Obviously, logic is not part of bureaucratic function.

❖ THOSE YOU TRUST THE MOST CAN STEAL THE MOST.

A new book, *The Immortal Life of Henrietta Lacks*, by Rebecca Skloot is now in circulation telling of the amazing contribution of this granddaughter of Virginia slaves to medical research around the world. Ms. Lacks, a 30 year old very attractive African-American woman, died of cervical cancer in 1951 after having given birth to five children. She died at Johns Hopkins Hospital, the only medical facility in that area which provided care for indigent black patients. Dr. George Gey was head of tissue research and had been repeatedly trying and failing to keep cells growing in his lab. Without obtaining permission nor giving any explanation, Dr Gey took a dime size biopsy of Ms. Lacks pelvic cancer and deposited the cells in his special growth media. To his surprise and great joy the cells almost doubled over night and continued to grow. He excitedly informed his colleagues, named the cells HeLa, and sent growing cultures to labs in Texas, India, Amsterdam, New York or wherever requested. Dr. Gey kept the donor identity secret and Henrietta Lacks was buried in a plain wooden box in an unmarked grave, never recognized for her gift. After Gey died in 1970, the secret came out at a dinner party when a scientifically-minded guest asked Lacks family members about possible relation to HeLa research. Only then did her descendants understand the immense magnitude of Henrietta’s stolen contribution. HeLa cells have contributed immeasurably to medical research in a multitude of fields not just in cancer but in polio, in-vitro fertilization, cloning, and gene mapping. Her cells have generated hundreds of millions of dollars for the pharmaceutical industry, but not one nickel for her family. If all HeLa cells ever grown could be laid end to end they would wrap around the earth at least three times, spanning more than 350,000,000 feet, according to one research scientist. Johns Hopkins and George Gey gained immense prestige for HeLa cultures, but do not celebrate Ms. Lacks’ contribution, nor acknowledge the ethical conflict of stealing

and exploiting her tissue. It is not on a level with the Tuskegee penicillin research, but shows the ugly racial attitude of the 1950s.

❖ THIS INFECTIOUS DISEASE MAY SOON BE CALLED MRSA-CRSA.

A study was recently published in the journal *Pediatrics* evaluating 25 children’s hospitals admissions of 30,000 children for MRSA (methicillin-resistant staph aureus) infections over the past ten years. The lead author, Jason Newland, M.D., an infection disease specialist at Children’s Mercy Hospital at the University of Missouri-Kansas City, found that the numbers have increased 10 fold over a decade. Most of the diagnoses were for skin or muscle infection and 374 patients died, but it was not certain if the deaths were due to MRSA. The initial infection is often a pimple or furuncle which can rapidly spread to deeper tissue, lungs or bones. The study noted a coinciding rise in use of clindamycin, a popular and easy to take antibiotic which MRSA are frequently found to resist. “Staph are incredibly cagey and will ultimately find their way around any antibiotic,” said Dr. Newland.

❖ IN THE HISTORY OF THE WORLD IT IS THE ABSURD THAT APPEALS TO THE MARTYR.

Shock, horror and disbelief is an apt description to the Fort Hood massacre of November 5, 2009 when U.S. Army Major Nidel Hasan, a physician psychiatrist, allegedly shot and killed thirteen officers and enlisted men and wounded 32 others. According to Senators Joe Lieberman (Ind. Conn.) and Susan Collins (Rep. Maine) of the Governmental Affairs committee, this officer’s associates and superiors had for years been aware of his growing Islamist radicalization. The FBI and the Department of Defense were aware of e-mails he exchanged with radical Yemenis. To review the massacre, the administration hand-picked outsiders who were formerly with the Justice or Defense Departments, but to date the administration has withheld crucial information from Homeland Security and the Governmental Affairs committee. The excuse for refusing this vital information to appropriate oversight people is that it might compromise witness testimony at a trial. That sounds much like the rhetoric of the previous administration, and is rather lame for an administration that came into office promising honesty and transparency.

❖ IT IS AS NATURAL TO DIE AS TO BE BORN.

A sad commentary on the times is the loss of the 107 year-old Honolulu Medical Group (HMG). The last four physicians remaining in the practice sent messages to their patients notifying them of the relocation of their offices. The HMG was established in 1903 and is one of Hawaii’s oldest medical practices. Their numbers were as many as 46 doctors and specialists in the mid-1980s and the group was touted as the one-stop medical center including a team of internists, pediatricians, ob/gyns, ophthalmologists, and dermatologists. Their numbers gradually eroded until 10 doctors were left in space designed for 50 plus, the HMG could not pay the rent, and chapter eleven bankruptcy was declared last November. The major creditor, Queen’s Development Corp., might have re-negotiated the rent, but could not do so because of the “Stark statute.”

❖ WHEN THE MARKET CRASHES, THERE’S ALWAYS A WAY OUT FOR THE RICH.

The five bedroom, five-and-a-half bath, 5,182 square foot ocean front home, located on a 1.65 acre Makena estate was on the market for six months and recently sold for \$19.85 million, a new record for residential property on Maui. Originally listed for \$38 million, it was discounted to \$27.5 million before the “give-away” price just under \$20 million. Apparently some folks have escaped the recession.

❖ WHO APPROACHES, FRIEND OR ENEMA?

In China a 59-year-old chef consumed large amounts of alcohol and fell asleep at a party. While he was unconscious his “friends” inserted a live eel into his rectum. He had severe rectal bleeding and died ten days later in a hospital intensive care unit of hemorrhage and sepsis. Findings at autopsy included a dead eel which had eaten through the man’s bowel wall.

ADDENDA

- ❖ According to a British survey 20% of women who have ended a relationship did so because their significant other was addicted to a video-game.
- ❖ In the last year and one-half, belief in global warming has dropped from 71% to 57%.
- ❖ May 15, 1940, is the birthdate of nylon stockings.
- ❖ Fido means “faithful” in Latin.
- ❖ If four out of five people suffer from diarrhea, does that mean that one enjoys it?

ALOHA AND KEEP THE FAITH — rts■

(Editorial comment is strictly that of the writer.)

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