# HAWAI'I MEDICAL JOURNAL

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# Ola Pono Ike

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# 2008 American College of Physicians, Hawaii Chapter Meeting Abstracts & Presentations

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Reid Hoshide; E Fernandez; J Orr; B Brooks; A Grandinetti; P Holck; EK Tam

# The Impact of the Rapid Response Team on Patient Care at Tripler Army Medical Center

CPT Silvia Burgess MD[1]
Christine W. Loyle BA[1]
CPT(P) Julia T. Lim MD[1]
CPT Jason K. Burris MD[1]
COL Stephen M. Salerno MD[1]

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**Background:** Rapid response teams (RRTs) are an increasingly popular patient safety intervention to provide timely expert support of decompensating patients. Details on why RRTs are called, when they are called, and what they do when triggered have not been well described in the literature.

**Methods:** The authors conducted a prospective study of RRT calls performed on adult patients at Tripler Army Medical Center between November 2006 through July 2007. Data on the nature of the call, interventions performed during the call, vital signs before and after the call, and patient outcomes were extracted from RRT call records and patient charts.

**Results:** 234 calls were placed between November 2006 and July 2007. More than one trigger for RRT activation was cited for the majority (56%) of calls. The most common reasons for an RRT call were abnormal vital signs (65%) meeting mandatory activation criteria, and concern about patient deterioration by a member of the health care team (72%). The majority of the calls occurred from the internal medicine wards, and 80% of the calls occurred between 7:00 AM and 11:00 PM. Most patients (57%) remained in their room following RRT activation. Common interventions by the RRT included providing immediate respiratory therapy and establishing intravenous access. The mean systolic blood pressure (80.9 mmHg $\pm$ 11.6 vs 92.7 mmHg $\pm$ 23.4, p=0.0004) in hypotensive patients was significantly improved after RRT intervention. The average oxygen saturation by pulse oximetry was higher (93.8% $\pm$ 8.91 vs. 97.1% $\pm$ 2.98, p<0.0001) and the pulse was lower (93.5 beats per minute $\pm$ 26.68 vs 89.2 beats per minute $\pm$ 22.75, p<0.001) after the RRT intervened. The intervention of the RRT resulted in transfer of 33% of patients to higher levels of care (intensive care or progressive care unit). The majority of patients requiring transfer to higher levels of care were mn and ≥65 years of age.

**Conclusions:** RRT activation provided timely support that stabilized patients in their room during the majority of calls. Approximately one third of patients assessed required transfer to a higher level of care. The impact of the RRT on length of stay and mortality requires further study.



# Post-stroke Bipolar Affective Disorder in the Elderly: A Case Report and Literature Review

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**Introduction:** Numerous emotional and behavioral disorders occur following cerebrovascular accidents. Although post-stroke depression is the most common of these disorders, post-stroke mania and bipolar affective disorder have been reported on rare occasions. The psychiatric and behavioral disorders following cerebrovascular accident reduce patient autonomy and increase caregiver burden, especially in elderly patients.

**Case Report:** A 76-year-old man with history of type 2 diabetes, hypertension, congestive heart failure, and hyperlipidemia was admitted to the hospital because of left hemiparesis. He was found to have a right-sided cerebral infarction in the territory of the middle cerebral artery. He developed post-stroke depression that improved with antidepressant treatment. He also had post-stroke seizure. Subsequently, he developed manic episode with combative behavior and abnormal sexual behavior. His cognitive function also declined.

**Discussion:** Neuropsychiatric consequences of stroke are associated with multiple predisposing factors. Left frontal lobe or left basal ganglia lesions have been found to be associated with post-stroke depression. Anatomic lesions in post-stroke mania or bipolar affective disorder are not as clear. A right hemispheric lesion in a limbic connection area may be associated with post-stroke mania.

**Conclusion:** Emotional and behavioral disorders after strokes negatively impact rehabilitation, cognition, and long-term recovery. Evaluation and pharmacological treatment may improve quality of life, especially in elderly patients. Further study is needed to locate specific anatomical lesions associated with these psychiatric and behavioral disorders and cognitive function.

**Poster can be viewed at http://www.hmaonline.net**

# Pantoea agglomerans: An Underreported Cause of Serious Infection in Hawai'i

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Susan Fraser MD[1]

1. Tripler Army Medical Center, Honolulu, HI

**Purpose:** Pantoea agglomerans is a gram negative rod that is part of the normal human skin flora. P. agglomerans is generally considered nonpathogenic. However, at Tripler Army Medical Center this organism has been isolated from many patients with clinical symptoms of significant infection without other obvious causes. The pathogenicity of this organism has never been reported in a large case series in adult patients.

**Methods:** The authors conducted a retrospective chart review of all patients between 1990 and December 2006 that had P. agglomerans isolated from at least one culture. They abstracted the specimen sites, other organisms isolated at the same time, antimicrobial resistance patterns, and demographic characteristics of the patients infected.

**Results:** 176 isolates from 162 patients ranging in age from 1 week to 80 years were reviewed. Specimen sites included skin/superficial wounds (91), blood (22), urine (17), lung/respiratory (10), eye (9), ear (7), mouth (3), gallbladder (1), peritoneum (1), and cervix (1). Eleven patients with skin infections had P. agglomerans as a lone isolate, 4 of which were noted to have retained foreign bodies removed from the infection site. Thirteen of 22 patients with positive blood cultures had central venous access and/or arterial lines in place.

**Conclusion:** At this facility P. agglomerans has been associated with many significant infections. Further investigation is required to elucidate the role of P. agglomerans as an emerging pathogen.

# 26-year-old Woman With *Corynebacterium accolens* Breast Abscess

CPT Jeremy P. Domanski MD[1]
COL Susan L. Fraser MD[1]

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**Introduction:** Mastitis is common among lactating women, with breast abscesses complicating up to 10% of cases. Commonly implicated organisms include *Staphylococcus* and *Streptococcus* sp, as well as *E. coli*. The authors report the second case of breast abscess due to C*orynebacterium accolens*, a unique lipophilic gram positive rod.

**Case Report:** A 27-year-old healthy Caucasian woman was seen in the Infectious Disease clinic for persistent mastitis. She was immunocompetent and non-lactating, and had initially presented after a 2-week history of a painful left breast lump. She denied breast trauma. Her symptoms persisted despite 2 courses of cephalexin. Biopsy showed acute and chronic mastitis with focal microabscess formation and granulation tissue. She was treated with several more antibiotic courses without cure. Incision and drainage was required. Once sterile oil was added to the media, cultures revealed the lipophilic organism *Corynebacterium accolens*. The patient was treated with gatifloxacin and elected to have definitive therapy with wide local excision under general anesthesia.

**Discussion:** Mastitis and breast abscess due to *Corynebacterium* sp. have been described in only a few case reports and one case series from New Zealand and remain a distinctly rare occurrence. *Corynebacterium accolens* is typically a non-pathogenic organism found in the respiratory tract. Until now, there has been only one previously described case of breast abscess or mastitis secondary to C*orynebacterium accolens*. There may be a higher prevalence of Corynebacterium associated breast abscesses in the Pacific Islands due to undetermined environmental exposures. Lipid laden media or sterile oil may enhance growth and treatment with a lipophilic antibiotic is recommended.

**Poster can be viewed at http://www.hmaonline.net**

# Does Procedure Volume Impact Confidence and Complications Among Internal Medicine Residents

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**Background:** There is little research on procedural complications related to time of day or week, resident experience, and presence of a supervisor. The authors wished to see if resident confidence was related to the number of procedures performed and if procedure complications were related to resident confidence, prior procedures performed, timing of procedures, or presence of a supervisor.

**Methods:** 26 residents were surveyed for confidence in common internal medicine procedures on a 5-point Likert scale. Anchors for the scale were: 1, indicating full confidence and 5, indicating no confidence. Procedure logs for 1 year were reviewed for the time of procedure and complications. Residents were queried for the presence of complications and which supervisors were in the room at the time of the procedure. Proportions were compared using the Fischer's exact test.

**Results:** A mean of $15 \pm 9.6$ of the study procedures were performed by each trainee over the academic year. Of the 396 procedures performed, complications were not more likely to occur during nights and weekends (p=0.08) or when supervisors were present (p=0.14). Residents performing 3 or more cumulative procedures were significantly more confident ($p<0.05$) than residents performing less procedures with the exception of paracentesis. There was a linear correlation between the number of procedures performed and resident confidence on the Likert scale.

**Conclusion:** Procedural complications are not less common when residents are supervised and not more likely after hours and on weekends. Procedural confidence is related to cumulative number of procedures performed. Residents become confident with most procedures after successfully performing 3 of them.

**Poster can be viewed at http://www.hmaonline.net**

# Association Between Low Blood Pressure and Cognitive Function in Late Life: The Honolulu-Asia Aging Study

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Research supported by: The Hawai'i Medical Student Aging Research National Training Center (NIA, John A. Hartford Foundation and American Federation for Aging Research grant); Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawai'i; Pacific Health Research Institute; Honolulu Department of Veteran Affairs; National Institute on Aging; National Heart, Lung, and Blood Institute.

**Background:** Hypertension in mid-life is a strong predictor of subsequent dementia. The relationship between blood pressure (BP) in late life and cognitive function is less understood, especially for low BP. The authors studied the association between low BP and cognitive function over 6 years.

**Methods:** The Honolulu-Asia Aging Study began in 1991-93, when 3734 Japanese-American men ages 71-93 years were administered the Cognitive Abilities Screening Instrument (CASI). CASI scores ranged from 0-100, and 3-year and 6-year cognitive decline were defined as drop in score of >=10 or >=14 points, respectively (1 SD). BP was measured by standard manometer and mean of two readings was used. Subjects were divided into 4 groups for systolic (SBP): <120, 120-139, 140-159, and ≥160 mmHg; and 3 groups for diastolic (DBP): <80, 80-89, and ≥90 mmHg. Analyses used chi square, GLM, logistic regression, mixed models for change in CASI and Cox proportional hazards models.

**Results:** The prevalence of dementia was 6%, an additional 10% had cognitive impairment (CASI <74). Prevalent dementia and cognitive impairment were more common in low SBP (<120 mmHg) and low DBP (<80 mmHg) groups ($p<0.0001$). Multiple logistic regression analyses adjusting for age, education, apoE4, stroke, diabetes, and smoking found that those with low SBP were significantly associated with prevalent dementia (OR=2.70, 95% CI=1.68-4.35, $p<0.0001$), with normal SBP (120-139) as reference. Those with low SBP were more likely to have prevalent Alzheimer's Disease (OR=2.20, 95%

CI=1.04-4.66, p=0.04), but not vascular or mixed/other dementias. Multivariate models found no association between low SBP or low DBP and cognitive decline or incident dementia over 6 years. Those with low SBP had significantly higher rates of prevalent CHD, stroke and functional impairment, suggesting that the association with prevalent dementia may be due to chronic disease rather than causal.

**Conclusion:** Low SBP in late life had a significant association with prevalent dementia and Alzheimer's Disease, but not cognitive decline or incident dementia. Those with low BP were significantly sicker and no longer reflected a healthy group of elderly subjects.

**Poster can be viewed at http://www.hmaonline.net**

## Unexplained Hepatocellular Injury Associated With Graves' Disease

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**Introduction**

- Hepatic Dysfuction is an uncommon but well documented complication of hyperthyroidism.
- Virtually all cases described resulted in cholestatic abnormalities.

**Poster can be viewed at http://www.hmaonline.net**

## Smoking Prevalence and its Association with Surgical Procedures and Co-morbidities

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**Background:** Estimates suggest that 17% of adults in the state of Hawai'i smoke. Smoking has been found to be associated with increased surgical and anesthesia complications, as well as increased the need for intensive care. The Anesthesia Pre-Operative Evaluation Center (APEC) in Queen's Medical Center (QMC) is aimed at attaining better post-operative outcomes, therefore information regarding the effects of smoking is essential in creating smoking cessation interventions. The purpose of this retrospective review is to discover the prevalence of smoking in a small subset of APEC records, as well as the association between smoking status and both surgical procedures and patient co-morbidities such as diabetes.

**Methods:** A retrospective review using APEC's patient Health Assessment Questionnaire of patients at QMC was conducted. Analysis was conducted using a Chi-squared test, Fisher Exact test and a One-way ANOVA model.

**Results:** The prevalence of smokers in APEC was found to be 16.7% and individuals who quit smoking were significantly older than current or non-smokers ($p$ value <0.001). Diabetes mellitus was the only co-morbidity found to be significantly associated with smoking status ($p$ value 0.039). The only surgery found to be significantly associated with smoking status was knee replacement as these individuals tended to not be current smokers (P-value 0.045).

**Conclusions:** The results of this study support previous research suggesting an association between smoking and increased rates of diabetes mellitus. Smoking cessation programs should be further emphasized in pre-operative evaluation and education and in diabetes prevention and management. Further studies should continue to assess the possible connection between smoking and surgical procedures especially in regards to knee surgery.

**Poster can be viewed at http://www.hmaonline.net**

## What Virulence Factors Enable *Staphylococcus aureus* to Cause Blood Stream Infections?

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**Background**

- Staphylococcus aureus (S. aureus) is a major cause of severe nosocomial and community-acquired infections.
- S. aureus bloodstream infections (BSIs) have been reported to cause 30-day mortality of up to 29%.

**PowerPoint presentation can be viewed at http://www.hmaonline.net**

# Hypertrophic Osteoarthropathy and Hypercalcemia in Metastatic Renal Cell Carcinoma

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**Introduction:** Hypertrophic Osteoarthropathy (HOA) is a paraneoplastic syndrome defined as digital clubbing and periosteal proliferation along the tubular bones. It is commonly associated with primary adenocarcinoma of the lung, cardiac shunts, and other malignancies that metastasis to the lung to rarely include renal cell carcinoma. Bone pain in HOA responds to treatment with non-steroidal anti-inflammatory drugs (NSAIDs) while definitive therapy in HOA is treating underlying disease. The pathogenesis of HOA is not completely understood; however, increased prostaglandin production appears to have a central role in its development. Elevated prostaglandin levels have been associated with malignancy and may drive hypercalcemia in some cases. The authors present a case of metastatic renal cell carcinoma associated with both HOA and hypercalcemia. The patient developed hypercalcemia after stopping NSAIDs for treatment of her bone pain.

**Case:** A 50 year-old Caucasian woman with renal cell carcinoma with metastatic disease to the lung presented to the emergency department with complaints of recent falls and was found to have a calcium level of 13.8mg/dL (8.4-10.2 mg/dL). One month prior to her presentation her serum calcium was 9.1mg/dL. Two weeks prior, she had discontinued large amounts of NSAIDs (2.5GM of ibuprofen/day). Initial laboratory evaluation revealed low parathyroid hormone and parathyroid-related protein, an increased 1,25 dihydroxyvitamin D level at 83 pg/mL (15-60 pg/mL). Bone scan revealed increased lower extremity cortical reactivity, particularly the distal tibia, most consistent with paraneoplastic HOA with no bony metastasis. Treatment with intravenous fluid hydration and pamidronate resulted in decreased calcium level and resolution of bone pain.

**Conclusion:** Prostaglandin concentrations have been found to be elevated in malignancy and are thought to play a role in the pathogenesis of HOA. This patient's hypercalcemia manifested after discontinuation of large amounts of NSAIDs, which block prostaglandin synthesis. Prostaglandins may be the mediators for both the HOA and hypercalcemia seen in this patient.

# Evaluation of Empiric Oral Antibiotic Treatment for Outpatients With Cellulitis in a Community With a High Prevalence of Community –associated Methicillin-resistant *Staphylococcus aureus* (CA-MRSA) Infections

Thana Khawcharoenporn MD[1]
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**Background:** There is limited data on optimal oral antibiotic treatment for outpatients with skin infections in areas with a high prevalence of CA-MRSA infections such as Hawai'i.

**Methods:** The authors performed a retrospective cohort study of 197 adult patients with 222 independent episodes of cellulitis seen at a teaching clinic of a tertiary care medical center in Honolulu between January 2005 and June 2007. Treatment success rates in patients receiving oral antibiotics with and without activity against MRSA were compared. Predictors of treatment failure and hospitalization were identified.

**Results:** Oral antibiotics were prescribed in 194 (87%) of 222 episodes. Cephalexin and trimethoprim-sulfamethoxazole (TMP-SMX) were used empirically in 45% and 40% of the episodes respectively. Results of cultures from infected sites were available in 89 (40%) episodes and revealed CA-MRSA in 55%. Treatment with TMP-SMX resulted in overall higher success rates compared with cephalexin (87% vs. 71%; OR=2.70; $P$=0.02). Subgroup analyses demonstrated a significantly higher success rate of TMP-SMX than cephalexin. This was true for patients who were men, Pacific Islander, younger than 50 years old, had diabetes mellitus (DM), cellulitis with ulcers, or positive cultures for MRSA from sites of infections. In logistic regression analysis, moderate disease severity was an independent predictor of treatment failure ($P$<0.001) while independent risk factors for hospitalization were moderate disease severity, DM, and lower extremity involvement ($P$<0.001, $P$=0.04 and $P$=0.04 respectively).

**Conclusion:** Antibiotics with activity against MRSA, such as TMP-SMX appear more effective than inactive ones, such as cephalexin, as empiric treatment for cellulitis, especially in certain patient groups. Close monitoring is required in patients with moderate disease severity.

**PowerPoint presentation can be viewed at http://www.hmaonline.net**

## Chronic Thromboembolic Pulmonary Hypertension in an Asian Woman

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**Introduction**
Pulmonary hypertension is a life-threatening condition with a poor prognosis. Chronic thromboembolic pulmonary hypertension (CTPH) is atreatable etiology of pulmonary hypertension that results in progressive exertional dyspnea due to single or recurrent thromboembolic obstruction of the major pulmonary arteries. Hemodynamic progression of thromboemboli is potentially reversible with pulmonary thromboendarterectomy, but the rarity of this disease makes it a challenging diagnosis.

**Poster can be viewed at http://www.hmaonline.net**

## Graves' Disease Manifested as Vocal Cord Dysfunction

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**Introduction:** Vocal cord dysfunction (VCD) is characterized by a respiratory disorder where the larynx exhibits paradoxical vocal cord adduction. This occurs mainly during inhalation creating airflow obstruction at the level of the larynx. Presenting signs vary from stridor to wheezing and patient symptoms are most often mistaken as asthma. Further, patients are often mistaken to have asthma refractory to treatment, vocal cord paralysis, or laryngospasm. In the United States, vocal cord dysfunction is usually diagnosed in young adult women age 20-40 with psychiatric conditions such as anxiety, depression, borderline personality disorder, or obsessive-compulsive disorder.

**Case Report:** A 41-year-old man active duty, athletic US Marine with no significant past medical history presents to the emergency room with acute onset dyspnea and vocal strain 4 months after returning from his third deployment to Iraq. On examination, he was tachycardic with stridor noted over the larynx, with a normal neck exam. He was subsequently referred to the ear, nose, and throat clinic where a laryngoscopy demonstrated paradoxical vocal cord motion. VCD was diagnosed and he underwent treatment from speech therapy. Despite compliance with therapy he remained symptomatic and was referred to the pulmonary clinic. Previously, he had been able to run up to 3 miles a day and now experienced dyspnea after 200 feet. Evaluation included CXR (normal), a methalcholine challenge test which was negative, and cardiopulmonary exercise test which showed a remarkably elevated heart rate. Further work-up included a transthoracic echo revealing only mild pulmonary hypertension and thyroid function tests which demonstrated hyperthyroidism. A CT of his chest was done for cough and one isolated episode of hemoptysis and showed bilateral thyroid enlargement and a large smooth triangular anterior mediastinal mass. Radioactive iodine uptake scan showed diffuse bilateral homogenous iodine trapping consistent with Graves' disease. Following his diagnosis of Graves' he was treated I-131 ablation and was placed on thyroid replacement therapy. Three months following Graves' treatment he is euthyroid and his VCD improved. He was able to redeploy to Iraq at his request.

**Discussion:** Vocal cord dysfunction is typically associated with wide spectrum diseases such as asthma, gastroesophageal reflux, sinusitis, post nasal drip, strenuous exercise, irritant fumes, allergens, or psychogenic causes. Earlier literature described VCD exclusively to be from a conversion reaction. This patient was initially diagnosed with VCD that the authors suspect was secondary to Graves' disease. Hyperthyroidism can present in many ways with a constellation of symptoms but review of the literature does not list vocal cord dysfunction as one of the presenting signs.

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## Treatment Outcomes Among Patients with Hepatitis C in Hawai'i

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**Background:** More than 20,000 Hawai'i residents have Hepatitis C virus (HCV) infection and may benefit from treatment, yet the outcome of prior therapy has not been adequately assessed.

**Methods:** A retrospective chart review of 50 patients treated with pegylated interferon and ribavirin was conducted.

**Results:** Mean age 49.1 years; 36 men, 14 women; Caucasian 64%, Asian 14%, Hawaiian 2%; Genotype 1-68%, genotype 2-8%, genotype 3-22%; injection drug use 46%; tattoo 46.3%; cocaine use 39%; blood transfusion 14.6%; HIV 4.9%; alcohol abuse 48.8%; meth-

amphetamine use 4.9%; psychiatric disorder 48.8%; Knodell score (liver biopsy) mean 8; HCV RNA viral load less than 200,000IU/ml 34%: BMI mean 29.4 kg/m$^2$.

**Outcomes:**

| Factors | Failed to complete treatment (n=14/50; 28%) | End of treatment viral clearance (n=25/36; 69%) | Sustained virologic response (SVR) (n=21/32; 66%) |
|---|---|---|---|
| Age<50 (30) VS >50years(20) | 9 (30%) VS 5 (25%) | 15 (50%) VS 10 (50%) | 13 (43%) VS 8 (40%) |
| Male (36) VS Female(14) | 10 (28%) VS 4 (28%) | 20 (56%) VS 5 (36%) | 17 (47%) VS 4 (29%) |
| Caucasian (32) VS Other(18) | 11 (34%) VS 3 (17%) | 14 (44%) VS 11 (61%) | 12 (38%) VS 9 (50%) |
| Genotype 1 (34) VS 2/3/6(16) | 11(32%) VS 3 (19%) | 13 (38%) VS 12 (75%)* | 9 (26%) VS 12 (75%)* |
| RNA <200,000 IU/mL (15) VS >200,000 IU/mL (35) | 0 (0%) VS 14 (40%)* | 14 (93%) VS 11 (31%)* | 12 (80%) VS 9 (26%)* |
| BMI <25 kg/ m2 (23) VS >25 kg/ m2(27) | 9 (39%) VS 5 (19%) | 10 (43%) VS 15 (56%) | 9 (39%) VS 12 (44%) |
| ALT <90 U/L (31) VS > 90 U/L (19) | 5 (16%) VS 9 (47%)* | 18 (58%) VS 7 (37%) | 15 (48%) VS 6 (32%) |

* Statistically significant p<0.05

Failure to complete treatment was statistically associated with high viral load (p=0.011) and high ALT (p=0.039). Reasons for failure to complete treatment included death (2), loss follow up (9) and medical or psychological complications (3). The SVR (viral clearance 24 weeks after treatment) was 66% with 47% for genotype 1 and 92% for genotypes 2/3/6. End of treatment viral clearance and SVR groups was correlated with genotype 2/3/6 (p=0.034 and p= 0.004) and low viral load (p<0.001 and p= 0.002).

**Conclusion:** Failure to complete treatment was relatively high in this population but viral outcome was comparable to the mainland response and significantly correlated with genotype and viral load.

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# Prolonged QT Interval and QT Dispersion in HIV-infected Individuals

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**Background:** High rates of prolonged corrected QT (QTc) in HIV-infected patients have been previously reported in multiple studies. Prolonged QTc and QTc dispersion (QTd) are associated with cardiac arrhythmias and sudden cardiac death. The authors aim was to identify factors that may increase QTc and QTd in HIV-infected individuals.

**Methods:** A retrospective analysis was conducted on HIV-infected individuals enrolled in the Healthy Heart Study, an observational study investigating the prevalence of cardiac and metabolic side effects of HIV and anti-HIV drugs. Demographic information and medical histories were obtained by self-report. The clinical examination included an electrocardiogram. All leads of the electrocardiogram were simultaneously obtained. The QT interval lengths were measured manually in all leads with discernable T waves using an image processing program and corrected for heart rate using Bazett's formula.

**Results:** Prolonged QTc (>440 ms) were found in 13 (12.4%) of the 105 HIV-infected individuals studied, which is significantly higher than the prevalence of prolonged QTc reported in normal populations in NHANES III (6.3%). A significant correlation was found between QTc and age (r=0.19, p=0.05), which is consistent with the results of previous studies. However, there was no statistical significance between QTd and age. No significant associations were found between antiretroviral medications, CD4, viral load, and prolonged QTc.

**Conclusion:** A higher rate of QTc prolongation was seen in the cohort. Abnormalities in QTd were not found. Prolonged QTc but not QTd is significantly correlated with age in HIV-infected individuals. QT interval should be evaluated before prescribing medications that could potentially result in prolonged QT interval, a cause of cardiac arrhythmias.

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# A Perplexing Case of a 34-year-old Man With Unexplained Chest Pain, Very Low HDL and Central Hypogonadism

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**Introduction**

The use of anabolic steroids for performance-enhancement has received much attention in the media; abuse of steroids is increasingly recognized as a ubiquitous problem in athletes of all levels of competition. In addition to athletes, military service members frequently engage in body building and are at increased risk for steroid abuse. Primary care physicians have an important role in the recognition of patients at risk as well as the signs and symptoms of anabolic steroid abuse.

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# Tobacco Use, Back Pain, and the Need for Vertebral Surgery Among Patients Referred for Pre-operative Evaluation

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**Introduction/Background**

- In Hawaii, 17% of the population continues to smoke. More than 1,100 deaths each year are due to tobacco-related causes.
- Preparation for surgery provides a unique opportunity to promote tobacco cessation, and to learn if other conditions or surgeries are associated with tobacco use.

**PowerPoint presentation can be viewed at http://www.hmaonline.net**

# *Cardiobacterium hominis* Endocarditis Presenting as Acute Embolic Stroke: A Case Report and Review of the Literature

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**Background**

*Cardiobacterium hominis* (*C. hominis*), a gram negative bacilli bacteria in the HACEK group, is a recognized but rare cause of infective endocarditis. A case of *C. hominis* endocarditis presenting as acute embolic stroke is reported.

**Methods**

A comprehensive search was performed for *C. hominis* endocarditis cases reported in the English literature using the Pubmed databases from inception through September 2007. A total of 14 cases with neurological involvement were reviewed.

**Case Report**

A 31-year-old man with Crohn's disease was admitted for sudden onset left-sided hemiparesthesia and headache. He reported having low grade fever and fatigue for 6 days. Examination revealed a temperature of 38.1°C, a grade 2/6 systolic heart murmur at right upper parasternal border and decreased sensation in left arm and leg. Laboratory investigations showed WBC 8,700 with 77% segmented neutrophils and ESR 50 mm/hr. MRI of the brain demonstrated areas of acute infarction at right precentral, postcentral gyri, and subinsular cortex. The tranesophageal echocardiogram revealed a bicuspid aortic valve with vegetation. The patient was empirically treated with vancomycin and ceftriaxone. Blood cultures were obtained and grew a gram-variable rod that could not be identified using routine biochemical algorithms. Subsequent rRNA PCR identified the organism to be *C. hominis*. He completed a 6-week course of ceftriaxone monotherapy with no residual neurological deficit.

**Review of Literature**

There are a total of 63 reported cases of *C. hominis* endocarditis. The 14 cases with neurological involvements were reviewed. Characteristics of 14 *C. hominis* endocarditis patients included mean age (39±12 years), male sex (71%), insidious onset (median 6.5 weeks), and 64% with initial neurological symptoms. Valvular heart diseases are the major risk factors of acquiring the infection (50%). The most commonly involved valve was the aortic valve (64%). The 3 most common neurological presentations are visual defect (50%), frontal lobe hemorrhage (29%), and MCA aneurysm (29%). Combination therapy composed of penicillin and another antibiotic accounted for 76.9% of treatment regimens. Medical treatment was successful in 85.7% of cases. Valve replacement was required in 50% of cases.

# *Chryseobacterium meningosepticum* Presented as Cellulitis With Septic Shock: A Case Report and Review of the Literature

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**Background**
*Chryseobacterium meningosepticum (C. meningosepticum)*, a gram negative bacilli bacterium, is a rare cause of skin and soft tissue infection. The authors report a case of *C. meningosepticum* cellulitis with septic shock.

**Methods**
A comprehensive search was performed for *C. meningosepticum* skin and soft tissue infection cases reported in the English literature using the Pubmed databases from inception through September 2007. A total of 13 cases were reviewed.

**Case Report**
A 79-year-old woman with congestive heart failure, pulmonary hypertension, atrial fibrillation, chronic kidney disease, hypertension, and history of deep vein thrombosis with pulmonary embolism developed intermittent fever, progressive dyspnea, and bilateral lower leg edema for 2 days presented at the emergency department of Kuakini Medical Center. She denies chest pain, chills, history of trauma, and contact with soil or water. On physical examination, she had a blood pressure of 140/84 mm Hg, a pulse rate of 119/min, a body temperature of 37°C, and a respiratory rate of 29 /min. Swelling and erythematous skin in both lower extremities were observed. Initial laboratory test revealed leukocytosis (14,500 cells/ mm3 with 25% band form). The ESR was 50 mm/hr. An elevated total bilirubin (4.1 mg/dL) and BNP (1293 picogram/mL) were found. Medical therapy for congestive heart failure was initiated and cefazolin was administered for cellulitis. Venous duplex sonography of the lower extremities showed no evidence of deep vein thrombosis. On the next day, hypotension and more tenderness of right lower extremity were noted. Blood cultures grew gram negative bacilli. She was transferred to the intensive care unit. Broad spectrum antibiotics including cefepime, tobramycin, and vancomycin were started. Early goal directed therapy for septic shock was initiated. On the third day, *Chryseobacterium meningosepticum* were identified from the blood cultures. Sensitivity results revealed sensitivity to trimethoprim/sulfamethoxazole and ciprofloxacin. Antibiotics were changed to piperacillin/tazobactam, trimethoprim/sulfamethoxazole, moxifloxacin, and doxycycline. Transesophageal echocardiography showed no vegetation. She recovered from septic shock on fourth day of admission. Lower extremity cellulitis was resolved. She was discharged home and completed a 4-week course of intravenous and oral antibiotics.

**Review of Literature**
Characteristics of 13 *C. meningosepticum* skin and soft tissue infection patients included mean age (51.7±24.2 years), male sex (69%). Cellulitis (46%) and wound infection (46%) are the most common presentations. Burn is the major risk factor of acquiring the infection (31%). *C. meningosepticum* bacteremia is very common (92%). Community acquired infection (54%) is more common than hospital acquired (23%). Treatment with antibiotics and surgical interventions resulted in 80% success rate. Ciprofloxacin was used in 38% of cases.

# Effects of Volcanic $SO_2$ on Pulmonary Function

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**Introduction**
- Major emissions are from Pu'u O'o vent and some from Kilauea Crater.
- These volcanic emissions are comprised mostly of $SO_2$, $CO_2$, and $H_2O$ vapor.
- Recent $SO_2$ emissions can range from 300 tons per day (at pause) to 6000 tons when the volcano is active.

**PowerPoint presentation can be viewed at http://www.hmaonline.net**

# The Role of the Hyperbaric Treatment Center in Medical Education at John A. Burns School of Medicine (JABSOM)

**Richard W. Smerz DO, MTMH, Clinical Professor and Medical Director, Hyperbaric Treatment Center, John A. Burns School of Medicine (JABSOM)**

Undersea and Hyperbaric Medicine (UHM) is a recognized sub-specialty of medical practice sponsored by both the American Board of Preventive Medicine (ABPM) and the American Board of Emergency Medicine (ABEM).[1,2] This sub-specialty represents a small but significant concentration area that requires trained and experienced physicians. The Hyperbaric Treatment Center (HTC) of the University of Hawai'i, John A. Burns School of Medicine is positioned to provide training and education to physicians and medical students in the sub-specialty of Undersea and Hyperbaric Medicine. Historically, the military served as the sole source for such training.

The advent of recreational scuba diving in the mid-1950's, a burgeoning off-shore oil industry that necessitated the use of commercial divers in the 1960s, and an expansion of interest in the clinical applications of hyperbaric oxygen have emphasized the dearth of physicians trained in UHM. Hawai'i is surrounded by the Pacific Ocean, and many who live and visit here engage in diving activities. Some will suffer a diving injury. The Hyperbaric Treatment Center at the John A. Burns School of Medicine (JABSOM) evaluates and treats an average of 50-60 diving accident victims annually, and is the second most active recreational diving accident treatment facility in the United States. In addition to diving related disorders, the HTC treats patients who have medical issues that are amenable to hyperbaric oxygen administration. These conditions, approved by the Undersea and Hyperbaric Medical Society (UHMS),[3] include: carbon monoxide intoxication, clostridial myonecrosis, necrotizing soft tissue injury, delayed radionecrosis, acute blood loss anemia, enhancement of healing of problem wounds, preservation of compromised skin grafts and flaps, acute traumatic ischemias, refractory osteomyelitis, intracranial abscess, and thermal burns. Over 600 patients have been treated for conditions other than diving related injury.

For the last 15 years, the HTC has offered an elective, monthly rotation for residents who wish to learn about undersea and hyperbaric medicine.The program consists of one on one teaching with opportunity to participate in patient evaluation and care. To date, 62 residents have participated. In addition, HTC has instructed over 300 Emergency Room residents in a 1-day course that introduces UHM. This course is conducted monthly. Over the past 3-4 years, JABSOM MS IV students in their ER rotation have completed this course. Two-thirds of all the rotating residents have been ER residents of whom only 15% possessed any prior knowledge or understanding of UHM. Of those who had some rudimentary information based upon their own diving experience, only 3 had attended a didactic course on UHM.

While there are a number of short didactic courses available throughout the United States, there are very few clinical rotation opportunities. It is essential for an ER physician to gain some knowledge and understanding of UHM, preferably with an opportunity to see "real" patients who present with a diving related disorders. To underscore this point, the current ER specialty board certification examination includes questions related to UHM. Most of the residents who attend the 1-day course expressed their interest by the desire to see actual cases. There is a need for educational experiences that provide a "hands on" component, properly structured to meet the ever changing requirements of the Accreditation Council of Graduate Medical Education (ACGME).[4] The HTC has the potential to provide a unique experience that is rarely accorded residents in training, particularly ER residents as well as those in other specialties who may wish to sub-specialize in UHM with eventual board certification.

There is general consensus in the United States, Europe, Australia, and New Zealand, as to the content of a UHM curriculum.[5-12] In addition, ABPM, ABEM, and ACGME have concurred[1-2, 4] on requirements for board certification that include mandates for fellowship training and guidelines for program content. However the published literature does not address a required method for the conduct or evaluation of a fellowship or a clinical rotation in UHM. A recently published article addresses some of the learning and teaching approaches that could be followed during a short didactic course[13] and suggests a logical, sequential process for presenting the teaching material. In the article, there is no guidance as to the "best way" to conduct a clinical rotation.

The HTC faculty agrees that UHM is an important topic area primarily for ER residents, that the HTC is an ideal setting for providing that education, and finally, that more should be done to encourage and enhance the rotation experience.

Currently, a faculty member from HTC is a Fellow in Medical Education in JABSOM's Office of Medical Education, and proposes a restructuring of HTC's monthly rotation to achieve the following goals:

1. Development of a solid knowledge base and clinical skills necessary to evaluate and assess patients with dysbaric disease;

2. Development of a solid knowledge base and clinical skills to evaluate and assess patients with conditions which may be amenable to hyperbaric oxygen therapy;

3. Formulation of appropriate prescriptive treatment protocols for the various conditions treated with hyperbaric oxygen;

4. Acquisition of some experience in managing patients during hyperbaric treatment;

5. Development of a knowledge base and clinical skills to be able to physically screen individuals for suitability to be in a hyperbaric environment;

6. Familiarization with hazardous marine life injuries/exposures and their treatment;

7. Familiarization with investigational/controversial uses of hyperbaric oxygen as well as areas for future research;

8. Meeting the ACGME competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.

The program will employ a variety of instructional methods to include but not necessarily be limited to lectures, demonstrations, web-based assignments, clinical experience and patient assessments, case studies, journal club and literature reviews, participation in chamber operations, consultations as needed, weekly clinical rounds, mentored on-call responsibilities, and self-study. The residents, at the conclusion of their rotation, will be expected to demonstrate a satisfactory level of understanding of the physical and physiological principles and factors involved in UHM; develop a rational approach to the assessment, diagnosis, selection of treatment plan; and, execute outcome assessments of patients considered for recompression and hyperbaric oxygen therapy. In addition residents will be expected to conduct and safely manage chamber operations; perform physical assessment and screening examinations on diver candidates; and execute appropriate disposition related to suitability. Finally, the resident will be required to demonstrate a satisfactory level of understanding in the diagnosis and treatment of patients with injuries resulting from hazardous marine life; demonstrate an understanding of the investigational/controversial applications of hyperbaric oxygen; as well as be knowledgeable of emerging research.

The rotating residents will be evaluated pre-and post-rotation training by assessing objectively, the level of knowledge and understanding of the UHM curricular content; assessing subjectively the degree to which residents demonstrated behaviors consistent with the ACGME core competencies; and assessing the understanding of knowledge and the ability to problem solve, and to formulate a diagnosis and develop an appropriate treatment plan via presentations to the staff and faculty of 3 evolving case scenarios of hypothetical patients. The residents will provide feedback to the faculty by addressing how well the rotation may have benefited them and whether the goals and objectives were met. Suggestions for improving the course will be solicited.

ABPM and the ABEM have mandated that a 12-month fellowship will be required by 2010[1-2] in order to be eligible to sit for the UHM sub-specialty exam. This new curriculum described above will prepare ER residents to assess and evaluate effectively potential cases of dysbaric disease and those for whom the use of hyperbaric oxygen may be beneficial. The curriculum structure and content embodies the requirements outlined by the accrediting entities. The current efforts to revamp the curriculum will serve as a "first step" in developing a fellowship at JABSOM for those who may wish to pursue sub-specialty certification.

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# Fertility Preservation in Cancer Patients

**Torie Comeaux MD, PhD and Scott Lucidi MD; Tripler Army Medical Center**

In the last several decades, survival rates among patients diagnosed with cancer have improved dramatically. The cure rates for many pediatric cancers are between 70%-90%.[1] Also, many cancers occur in patients of reproductive age. For example, although gynecological cancers typically occur in postmenopausal women, it is estimated that 43% of cervical cancers, 18% of ovarian cancers and 8% of endometrial cancers will occur in women < 45 years of age.[2] Approximately 15% of all cases of breast cancer will occur in women who are under 40 years old.[3] Fortunately, when these tumors are detected at an early stage, the cure rates are also very favorable. This results in a larger patient demographic of childbearing age seeking treatment for infertility following cancer treatment.

## Risks associated with chemotherapy

Chemotherapy is known to have cytotoxic effects on both malignant and normal cells. The damage is reversible in certain tissues including the gastrointestinal tract and bone marrow. Since the ovary does not have any stem cells that replace oocytes, the cytotoxic damage is permanent. However, a recent animal study suggests that mammalian ovaries may actually contain germ cells that could be capable of proliferation.[4]

The inability of the ovary to replenish damaged cells is associated with both acute ovarian failure and premature menopause. Acute ovarian failure refers to the loss of ovarian function that arises during or shortly after the completion of cancer therapy.[5] Premature menopause is described as the loss of ovarian function that occurs years after completion of cancer therapy following a window of normal functioning.[5] A recent study used clinical data, hormonal analysis, and ovarian sonography to assess adult survivors of childhood cancer. The study concluded all of these patients were at risk for ovarian failure and indicated that even those patients with preserved menstrual cycles had evidence of ovarian impairment and were likely to undergo premature menopause.[6] Therefore, those women who do regain ovarian function following cancer treatment are highly encouraged to not delay childbearing. However, some recommend that conception should not be attempted less than 6-12 months after treatment due to potential risk to developing oocytes and a higher risk of recurrence within the first year.[7]

A number of factors have been evaluated to determine who is at risk for developing loss of ovarian function after chemotherapy. The number of primordial follicles decreases as women age; therefore, the risk of acute ovarian failure is higher in those women who are older at the time of initial treatment.[8] The majority of prepubertal girls and adolescents will either retain or recover function of the ovaries after cessation of treatment.[5]

Various chemotherapeutic agents affect the ovary differently. Alkylating agents, including cyclophosphamide, are particularly toxic.[7,8,9] However, antimetabolites (fluorouracil, cytarabine, and methotrexate) and vinca alkoloids (vincristine and vinblastine) have not been shown to cause premature ovarian failure.[8] Tables 1 and 2 summarize the risks of cancer treatments.[10]

## Risks associated with Radiation

Radiation has been known to cause significant damage to ovarian function. The extent of the damage is related to the dose, age at time of exposure, and field of radiation.[7] Radiation induced ovarian failure occurs at approximately 300cGy; only 11-13% experienced ovarian failure if exposure was less than 300cGy while 60-63% experienced ovarian failure if exposure was above 300cGy (11). Girls who receive whole abdominal or pelvic irradiation or total body irradiation are at a significant risk of developing acute ovarian failure.[5]

The uterus is also sensitive to radiation, especially if the patient has not yet reached puberty at the time of treatment.[12] One study indicated that after radiation, the volume of the uterus decreased by up to 40% and concluded that patients were at increased risk of early pregnancy loss, preterm labor and low birth weight secondary to impaired uterine blood flow.[13]

## Fertility Sparing Surgical Options

Traditionally, gynecological malignancies have been managed with total abdominal hysterectomy and bilateral salpingo-oopherectomy, obviously eliminating the possibility of future fertility. Increasingly, women with early stage cancers are undergoing more conservative therapy.

For patients with stage IA1 cervical cancer, cervical conization is an option. The risk of lymph node metastasis and risk of recurrence is approximately 1%.[14] A recent study selected 26 patients with early stage cervical cancer who desired fertility preservation. These patients were offered a laparoscopic lymphadenectomy with sentinel lymph node identification (SLNI).[15] In patients with negative nodes, a large cone or simple vaginal trachelectomy was performed. Median follow-up was 49 months and one patient had a central recurrence, which was treated with radical chemoradiotherapy. Eleven women became pregnant and 7 women delivered 8 children.

Radical trachelectomy may be offered to patients with stage IA1 with positive lymph-vascular space involvement, stage 1A2 or stage 1A1 cervical cancer. One review article examined 16 publications, which documented a total of 355 patients who underwent a radical trachelectomy.[16] One hundred and fifty-three patients (43% of those who underwent the procedure) attempted to conceive and 70% of them were successful, conceiving one or more times. A total of 161 pregnancies were documented and 49% resulted in a term delivery. Eight percent of the pregnancies ended in second trimester loss and 20% resulted in a preterm delivery.

Another study found tumor recurrence rate after radical trachelectomy to be 5% with a mortality rate from disease recurrence of 3%.[17] This is similar to the rates observed when patients have been treated with radical hysterectomy. Pregnancy occurred in 41%-79% of patients and resulted in term delivery in 38%.

Table 1.— Risk of Amenorrhea in Women with Cancer

| Degree of Risk | Treatment Protocol | Common Usage |
|---|---|---|
| High Risk<br>>80% of women develop amenorrhea | Whole abdominal or pelvic radiation doses > 6 Gy in adult women | Multiple cancers |
| | Whole abdominal or pelvic radiation doses<br>> 15 Gy in pre-pubertal girls<br>> 10 Gy in post-pubertal girls | Wilms' tumor, neuroblastoma, sarcoma, Hodgkin's lymphoma |
| | TBI radiation doses | Bone marrow transplant/stem cell transplant (BMT/SCT) |
| | CMF, CEF, CAF x 6 cycles in women 40 + | Breast cancer |
| | Cyclophosphamide 5 g/m2 in women 40+ | Multiple cancers |
| | Cyclophosphamide 7.5 g/m2 in girls < 20 | Non-Hodgkin's lymphoma (NHL), neuroblastoma, acute lymphoblastic leukemia (ALL), sarcoma |
| | Alkylating chemotherapy conditioning for transplant | BMT/SCT |
| | Any alkylating agent + TBI or pelvic radiation | BMT/SCT, ovarian cancer, sarcoma, neuroblastoma, Hodgkin's lymphoma |
| | Protocols containing procarbazine | Hodgkin's lymphoma |
| | Cranial/brain radiation >40 Gy | Brain tumor |
| Intermediate Risk | CMF or CEF or CAF x 6 cycles in women 30-39 | Breast cancer |
| | AC in women 40+ | Breast cancer |
| | Whole abdominal or pelvic radiation<br>10-15 Gy in prepubertal girls<br>5-10 Gy in postpubertal girls | <br>Wilms' tumor<br>Wilms' tumor, neuroblastoma |
| | Spinal radiation >25 Gy | Spinal tumor, brain tumor, neuroblastoma, relapsed ALL or NHL |
| Low Risk<br><20% of women develop amenorrhea | AC (anthracycline, cytarabine) in women 30-39 | Breast cancer |
| | CMF, CEF, or CAF x 6 cycles in women under 30 | Breast cancer |
| | Non-alkylating chemotherapy: ABVD, CHOP, COP | Hodgkin's lymphoma, NHL |
| | AC | Acute myeloid leukemia (AML) |
| | Multi-agent therapies | ALL |

Transposition of the ovaries outside of the pelvis is a technique that may be utilized to protect the ovaries from radiation. The dose of radiation to which the transposed ovary is exposed is about 5-15% the dose of the non-transposed ovary.[18] Preservation of ovarian function has been achieved and fertility has been documented in patients who underwent ovarian transposition prior to undergoing radiation.[19,20,21] Lateral transposition seems to be more effective than medial transposition.[22,23] The procedure can be done safely laparoscopically and ideally should be done just prior to initiation of radiation to decrease the likelihood of ovarian migration.[23] Risks associated with ovarian transposition include development of ovarian cysts, which could lead to further surgery and ischemic damage to the ovaries.[14,20,24]

Ovarian cancer can be divided into several different types of malignancies, which behave very differently from one another. Patients who may be candidates for conservative surgical management (i.e. unilateral salpingo-oophorectomy) include those with tumors of low malignant potential, malignant germ cell tumors, sex cord-stromal tumors and stage IA invasive epithelial ovarian cancer.[5]

Complex atypical hyperplasia can often progress to uterine cancer. The risk of endometrial cancer in hysterectomy specimens of patients previously diagnosed with complex atypical hyperplasia is 25%.[5] Standard treatment for patients with this diagnosis is hysterectomy. However, some have successfully treated patients with progesterone or gonadotropin-releasing hormone (GnRH) agonists and followed patients with serial endometrial biopsy to determine effect of hormonal therapy.[5]

One study followed patients who had early endometrial cancer and elected to undergo conservative management with the use of progestins. The patients were carefully selected and all had grade 1 (11 of 13 patients) or grade 2 (2 of 13 patients) endometrial cancer. All of the patients responded to hormonal therapy, although some

| Table 2.— Risk of Azoospermia in Men with Cancer | | |
|---|---|---|
| **Degree of Risk** | **Treatment** | **Common Usage** |
| High Risk<br>Prolonged azoospermia post-treatment | Total body irradiation (TBI) | Bone marrow transplant/stem cell transplant(BMT/SCT) |
| | Testicular radiation dose > 2.5 Gy in men | Testicular cancer, acute lymphoblastic leukemia (ALL), non-Hodgkin's lymphoma (NHL) |
| | Testicular radiation dose > 6 Gy in boys | ALL, NHL, sarcoma, germ cell tumors |
| | Protocols containing procarbazine | Hodgkin's lymphoma |
| | Alkylating chemotherapy for transplant conditioning | BMT/SCT |
| | Any alkylating agent (e.g., procarbazine, nitrogen mustard, cyclo-phosphamide) + TBI, pelvic radiation, or testicular radiation | Testicular cancer, BMT/SCT, ALL, NHL, sarcoma, neuroblastoma, Hodgkin's lymphoma |
| | Cyclophosphamide >7.5 g/m2 | Sarcoma, NHL, neuroblastoma, ALL |
| | Cranial/brain radiation >40 Gy | Brain tumor |
| Intermediate Risk | BEP x 2-4 cycles (bleomycin, etoposide, cisplatin) | Testicular cancer |
| | Cumulative cisplatin dose < 400 mg/m2 | Testicular cancer |
| | Cumulative carboplatin dose < 2g/m2 | Testicular cancer |
| | Testicular radiation dose 1-6 Gy (due to scatter from abdominal/pelvic radiation) | Wilms' tumor, neuroblastoma |
| Low Risk<br>Temporary azoospermia post-treatment | Non-alkylating chemotherapy: ABVD, OEPA, NOVP, CHOP, COP | Hodgkin's lymphoma, NHL |
| | Testicular radiation dose 0.2 – 0.7 Gy | Testicular cancer |

needed a longer course of progesterone. Six out of 13 patients did have a recurrence, and three of them received a second course of progestins; all had a complete response. Three patients in this study delivered 9 viable children.[25]

## Pharmacological Options

Administration of GnRH agonists with chemotherapy has been demonstrated to lower rate of premature ovarian failure.[26,27,28] Although the mechanism of action is unclear, it is possible that the medication causes interruption of follicle-stimulating hormone secretion, decreases perfusion to the ovaries, activates GnRH receptors, upregulates shpingosine-1-phospate and ultimately protects undifferentiated germ line stem cells.[29] GnRH-agonists have not been found to protect ovaries from damage associated with radiation.[30]

Sphingosine 1-phosphate (S1P) is an inhibitor of apoptosis. Several animal studies indicate that when used in conjunction with chemotherapy or radiation, S1P may help to protect ovarian function.[31,32]

## Assisted Reproductive Technology

Perhaps the most recognized method of fertility preservation is in-vitro fertilization (IVF) and embryo cryopreservation. This method is widely available and has proven efficacy.[33] However, several drawbacks include: need for a male partner, delay in treatment, and potential danger associated with stimulation (i.e. in patients with breast cancer).[29] Recent studies indicate that, in patients who could be harmed from traditional ovarian stimulation, letrozole or tamoxifen effectively stimulate ovarian follicle development while maintaining low estrodiol levels.[7,9]

Oocyte cryopreservation is an experimental option. There have been some live births from cryopreserved oocytes; however, it has not been nearly as successful as cryopreservation of embryos or sperm.[7] Ovarian cryopreservation is another experimental option. This technique would not require ovarian stimulation, and would therefore, not delay the patient's treatment.[7] The major dilemma involves how to mature the stored follicles in preparation for fertilization. Current research is studying 3 strategies including autotransplantation, xenotransplantation, and in vitro maturation [7,9] Given that both oocyte and ovarian cryopreservation are investigational, patients must be thoroughly counseled and should only be offered these options if participating in a research study.[33] Table 3 summarizes the reproductive treatment options for women with cancer.[10]

## Men with Cancer

Not surprisingly, the male reproductive system is also at risk of the negative effects of both chemotherapy and radiation.[34] Sperm cryo-

Table 3.— Reproductive Options for Women with Cancer

| Option | Embryo Freezing | Oocyte Freezing | Ovarian Tissue Freezing | Ovarian Transposition | Radical Trachelectomy | Ovarian Suppression | Donor Embryos | Donor Oocytes | Gestational Surrogacy | Adoption |
|---|---|---|---|---|---|---|---|---|---|---|
| **Status** | Standard | Experimental | Experimental | Standard | Standard | Experimental | Standard | Standard | Standard | Standard |
| **Time Requirement** | 10-14 days from menses Outpatient surgical procedure | 10-14 days from menses Outpatient surgical procedure | Outpatient surgical procedure | Outpatient procedure | Inpatient surgical procedure | In conjunction with chemotherapy | Varies; is done in conjunction with IVF | Varies; is done in conjunction with IVF | Varies; time is required to find surrogate and implant embryos | Varies depending on type of adoption |
| **Success Rates** | Approximately 40% per transfer; varies by age & center Thousands of babies born | Approximately 21.6% per embryo transfer 200+ live births | Case reports of two live births | Approximately 50% due to altered blood flow and scattered radiation | No evidence of higher cancer recurrence rates in appropriate candidates | Unknown; conflicting results reported Larger randomized trials in progress | Unknown; higher than that of frozen embryo IVF transfers | 40-50% | Similar to IVF – approximately 30% | N/A |
| **Cost** | Approx. $12,000/ cycle; storage fees & pregnancy costs additional | Approx. $12,000/ cycle; storage fees & pregnancy costs additional | $12,000 for procedure; storage fees & reimplantation costs additional | Unknown; may be covered by insurance | Generally included in the cost of cancer treatment | $500/month | $5,000-$7,000 (in addition to costs for IVF) | $5,000-$15,000 (in addition to costs for IVF) | $10,000-$100,000 | $2,500-$35,000 |
| **Special Considerations** | Need partner or donor sperm | May be attractive to single women or those opposed to embryo creation | Not suitable if high risk of ovarian metastases Only preservation option for pre-pubescent girls | Expertise required | Limited to early stage cervical cancer Offered at a limited number of centers | Does not protect from radiation effects | Donor embryo available through IVF clinics or private agencies | Patient can choose donor based on various characteristics | Legal status varies by state | Medical history often a factor |

preservation is an easy and inexpensive option for men who desire fertility preservation. Many studies document the efficacy of this treatment. A recent long-term follow-up study again demonstrated its safety.[35] For prepubertal boys, spermatogenesis has not yet been initiated and therefore sperm cryopreservation is not an option. For these prepubertal patients, testicular tissue cryopreservation may be an option; however, this technique is considered investigational. Finally, donor sperm is widely available and is an inexpensive and proven option for men with no viable sperm following treatment. Table 4 summarizes the reproductive treatment options for men with cancer.[10]

## Pregnancy Implications

The types of chemotherapy that a patient receives could have implications on future pregnancies.[8] Doxorubicin is associated with cardiotoxicity and could lead to heart failure, especially during the second trimester. Women who receive bleomycin are at risk of developing pulmonary fibrosis and should be counseled to undergo pulmonary function tests prior to pregnancy.

The effect of pregnancy on hormonally dependent malignancies is unclear. Although many recommend attempting conception as early as 6-12 months following cancer treatment, for hormonally responsive cancers such as breast cancer most recommend that survivors not attempt conception for 3-5 years after diagnosis.[8]

A large study reviewed outcomes of patients who had been exposed to radiation or chemotherapy prior to pregnancy to determine effect on live births, miscarriages, and low birth weight. Those who underwent chemotherapy were not at any increased risk of adverse outcomes, but patients exposed to radiation were at a higher risk of having low birth weight infants.[36] Neither radiation nor chemotherapy increases the risk of genetic disease in offspring conceived after exposure.[37,38]

## Conclusion

Medical advances have improved the diagnosis and treatment for many types of cancer. Ongoing research promises exciting possibilities for offering cancer survivors a chance at a normal life, including the hope of future fertility. Physicians must be aware of current and future options for preservation of fertility in order to ensure that their patients are well-informed.

For more information about the Cancer Research Center of Hawai'i, please visit www.crch.org.

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| Table 4.— Reproductive Options for Men with Cancer | | | | | |
|---|---|---|---|---|---|
| **Options** | **Sperm Banking (Masturbation)** | **Testicular Tissue Freezing** | **Testicular Sperm Extraction** | **Donor Sperm** | **Adoption** |
| **Status** | Standard | Experimental | Standard | Standard | Standard |
| **Pubertal Status** | After puberty | Before and after puberty | After puberty | After puberty | After puberty |
| **Success Rates** | Generally high The most established technique for men | No available human success rates | 30-70% in post-pubescent patients | 50-80% | N/A |
| **Cost** | Approx. $1,500 for 3 samples; storage fees average $500/year | $500-$2,500 for surgery; $300-$1,000 for freezing; $500/year for storage | $4,000-$16,000 (in addition to costs for IVF) | $200-$500 per vial (in addition to costs for IUI or IVF) | $2,500-$35,000 |
| **Special Considerations** | Deposits can be made every 24 hours | May be only option for pre-pubescent boys | Center should be able to freeze sperm found at time of biopsy | Can choose donor based on wide range of characteristics | Medical history often a factor |


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# Issues in Medical Malpractice XXV

**S.Y. Tan MD, JD, Professor of Medicine, John A. Burns School of Medicine, University of Hawai'i**

**Question:** Because of a particularly busy and hectic day, your medical charting was incomplete for a patient whom you saw at 8:00 AM. You had to leave for a hospital emergency and attend to some pressing personal matters. Your patient had complained of chest pain and you did obtain a normal EKG. You later discovered that he collapsed after he left your office and was hospitalized with a myocardial infarct. It is now 11:00 PM, and you have not had dinner. What should you do (one or more choices)?

A. Wait until the next day to complete the records when you are less hungry and your mind is fresher.
B. Complete the records before going home.
C. Write 'incomplete' and leave the note as is.
D. Complete the note with an explanation of the interruptions, and include the time of entry of both notes, including the normal EKG.
E. Medical records are kept for the convenience of the doctor. One should spend more time taking care of the patient and less time taking care of the records.

**Correct answers: B, D**

All medical entries should be made contemporaneously. A late or separate entry should be so identified. It is a bad idea to put off charting to another day, as it may be forgotten, and new events have a habit of overtaking the busy doctor. Charting is particularly critical when there is any hint of a malpractice complaint. Note that this case concerns a patient who may have developed a myocardial infarct that was 'missed' in the doctor's clinic. In his defense, the doctor did obtain a normal EKG (which may or may not be enough, depending on the clinical presentation and the patient's risk for a coronary event). If a suit is filed at a later date, the documentation of a normal EKG will serve as a defense.

Medical records are crucial to defend a doctor from a malpractice claim. Without them, there is virtually no chance of escape. Treat your records as a true friend rather than a nuisance.

## Medical Records

Anything arising out of the doctor-patient encounter can constitute part of the patient's medical record. This includes items like handwritten, typed, or electronic clinical notes; notes recorded from telephone conversations; all correspondence including letters to and from other health care professionals, insurers, patients, family, and others; laboratory reports; radiographs and other imaging records; electrocardiograms and printouts from monitoring equipment; audiovisuals; and other computerized/electronic records, including e-mail messages. This last category is assuming increasing importance as the favored mode of communication, and carries with it special medico-legal risks.

Well-kept records provide the health care provider with more than an accounting of the patient's medical condition. Not only do they serve to document diagnosis and treatment, they also preserve discussions of risks, options, and consent. A newcomer to the health care team will have the necessary information to assure continuity of care. Patient records also provide data for research, education, and quality assurance. Finally, records are important for business purposes, such as billing.

The medical record is of extreme importance in litigation, which typically takes place many months or years after the incident when memories regarding what was said or done may have faded. Furthermore, what was not documented can be legally construed to mean that it was not done. Whether or not the records are to be admitted as evidence is a matter for the discretion of the court, i.e., the judge. However, in the meantime, the records allow the attorneys to prepare their case. Generally speaking, entries in the medical records are admissible under the Federal Rules of Evidence as documentary evidence, so long as they are relevant and authenticated. Duplicates are admissible unless the authenticity of the original is challenged, or under the circumstances, it would be unfair to admit the duplicate in place of the original.[1]

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) comprises comprehensive federal laws that govern all aspects of a patient's medical information. The Act, a weighty document, attempts to strike a balance between the rights of patients to privacy to their medical information and the smooth and efficient delivery of health care. The law, which interestingly exempts those who do not utilize electronic communications, including billing, in their offices, went into effect in April 2003. HIPAA overrides state statutes that are less protective of patient access and privacy, but stricter state requirements continue to have priority.[2] States have enacted their own statutes relating to medical records, and it is therefore necessary for physicians to consult their state statutes to ensure full compliance with the law.

The intent of HIPAA is to inform consumers how their health information is being used. The emphasis is on preserving privacy of protected health information, and ensuring security of electronic transmission of such data. In practice, this means informing all patients, via postings in the office or hospital, direct mailings, brochures, etc., of the conditions under which the contents of their records will be shared with others, and the procedures in place to safeguard improper disclosures.

HIPAA creates new criminal and civil penalties for improper use or disclosure of information. Fines start at $100 for each violation. Criminal penalties are severe for wrongful disclosures, with fines up to $50,000 and up to a year in prison. If the violation is committed

*See **Medical Malpractice** p. 197*

# 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 2008** | | | | | |
| 8/3-8/4 | GS | Hawai'i Chapter, American College of Surgeons | JW Marriott Ihilani Resort & Spa, Honolulu | Oncology: State of the Art, 2007 and Beyond | Tel: (800) 328-2308<br>Web: www.hawaiifacs.org |
| 8/4-8/7 | R | Stanford University School of Medicine | Grand Hyatt, Kaua'i | LAVA: Latest Advances in Interventional Techniques | Tel: (888) 556-2230<br>Web: med.stanford.edu |
| 8/6-8/9 | EM | University of California - Davis | Mauna Lani Resort and Spa | UC Davis Emergency Medicine 2008: Hot Topics | Tel: (916) 734-5390<br>Web: cme.ucdavis.edu |
| 8/14-8/17 | D, FM, IM, ON | Kaua'i Foundation; Hawai'i Dermatology Association | Hyatt Regency Resort & Spa, Koloa, Kaua'i | 22nd Annual Hot Spots in Dermatology | Tel: (413) 458-2800<br>Web: www.hotspotshawaii.blogspot.com |
| 8/19-8/21 | Multi | Stanford University School of Medicine | O'ahu | 3rd Annual Complex Cardiovascular Patient Management | Tel: (650) 724-9549<br>Web: www.cme.stanfordhospital.com |
| 8/30 | Multi | Honolulu County Medical Society | Dole Cannery Ballrooms, Honolulu | How to Select and Implement an HER | Tel: (808) 536-6988<br>Email: info@hcmsonline.org |
| **October 2008** | | | | | |
| 10/9-10/11 | Multi | Hawai'i Primary Care Association | Hilton Hawaiian Village, Honolulu | 2008 HPCA Annual Conference & Learning Session | Tel: (808) 536-8442<br>Web: www.hawaiipca.net |
| 10/11-10/15 | OPH | American Society of Retina Specialists | Grand Wailea Resort, Wailea, Maui | 26th Annual Meeting | Web: www.asrs.org |
| 10/14-10/17 | ON | American Association for Cancer Research | JW Marriott Ihilani Resort & Spa at Ko'Olina | Chemical and Biological Aspects of Inflammation and Cancer | Tel: (215) 440-9300<br>Web: www.aacr.org |
| 10/20-10/22 | PD | Stanford University School of Medicine | Mauna Lani Resort and Spa | Popular Pediatric Clinical Topics 2008 | Web: www.cme.lpch.org |
| 10/22-10/25 | Multi | University of California - Davis | Hyatt Regency, Maui | 28th Annual Current Concepts in Primary Care Cardiology | Tel: (866) 263-4338<br>Web: www.ucdmc.ucdavis.edu/cme/ |
| 10/25-10/29 | PS | American Society of Plastic Surgeons | Hawai'i Convention Center, Honolulu | Plastic Surgery 2008 | Tel: (847) 228-9900<br>Web: www.plasticsurgery.org |
| 10/25-10/31 | PD | American Academy of Pediatrics, California Chapter & University Children's Medical Group | Grand Hyatt Kaua'i | Aloha Update: Pediatrics 2008 | Tel: (808) 354-3263<br>Web: www.ucmg.org |
| 10/26-10/30 | OBG | University of California - Davis | Ritz Carlton, Kapalua | 25th Annual UC Davis Obstetrics and Gynecology Conference | Tel: (866) 263-4338<br>Web: www.ucdmc.ucdavis.edu/cme/ |
| 10/27-10/31 | AN | California Society of Anesthesiologists | The Mauna Lani Bay Hotel, Kohala Coast, Hawai'i | CSA Hawaiian Seminar | Web: www.csahq.org |
| 10/31-11/2 | ORS | Department of Surgery, John A. Burns School of Medicine, University of Hawai'i | Sheraton Kaanapali Hotel, Kaanapali, Maui | Wrist Injury Course -- Trauma to Reconstruction | Email: joann.sakuma@wristcourse.org<br>Web: wristcourse.org/maui08home.html |

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| **November 2008** | | | | | |
| 11/3-11/6 | Multi | Methodist Healthcare | Fairmont Orchid, Kona | Advances in Medicine | Tel: (901) 516-8933<br>Web: www.methodistmd.org |
| 11/4-11/7 | R | Duke University Medical School, Department of Radiology | Hyatt Regency, Maui | Muskuloskeletal MRI in Maui | Tel: (800) 222-9984<br>Web: www.dukeradiologycme.org |
| 11/9-11/14 | RNR | Department of Radiology, Mayo Clinic | Fairmont Kea Lani, Maui | Neuroradiology: Practice to Innovation | Tel: (866) 242-1581<br>Web: www.mayo.edu/cme/radiology.html |
| **December 2008** | | | | | |
| 12/7-12/12 | EM | Institute for Emergency Medical Education, American College of Emergency Physicians | Wailea Marriott, Wailea, Maui | Annual Current Concepts in Emergency Care | Web: www.ieme.com |
| **January 2009** | | | | | |
| 1/9-1/11 | N | American Society for Peripheral Nerve | Grand Wailea Resort, Wailea, Maui | ASPN 2009 Annual Meeting | Web: www.peripheralnerve.org |
| 1/10-1/13 | Multi | American Society for Reconstructive Microsurgery | Grand Wailea Resort, Wailea, Maui | 2009 Annual Meeting | Web: www.microsurg.org |
| 1/19-1/23 | AN | California Society of Anesthesiologists | Hyatt Regency Maui, Ka'anapali Beach, Maui | CSA Hawaiian Seminar | Web: www.csahq.org |
| 1/25-1/30 | R | Department of Radiology, Mayo Clinic | Mauna Lani Resort | Tutorials in Diagnostic Radiology w/Advanced Radiology Life Support | Tel: (866) 242-1581<br>Web: www.mayo.edu/cme/radiology.html |
| 1/27-1/31 | R | NYU School of Medicine Department of Radiology | The Four Seasons Hualalai | NYU Radiology in Hualalai | Web: www.radcme.med.nyu.edu |
| 1/28-1/31 | PMD | American Academy of Pain Medicine | Hilton Hawaiian Village, Honolulu | Annual & Scientific Meeting | Web: www.painmed.org |

***Medical Malpractice*** *from p. 195*

under false pretenses, the penalty can reach $100,000 and five years in prison. Where the disclosure is coupled with the intent to sell or to use for commercial advantage or personal gain, the punishment reaches $250,000 and up to 10 years in prison.

Some in the profession view HIPAA as excessively burdensome and bureaucratic, as it may interfere with important aspects of the traditional practice of medicine. Congress, however, passed this law in response to the perceived widespread violation of the public's privacy rights in their own medical information.

This article is meant to be educational and does not constitute medical, ethical, or legal advice. It is excerpted from the author's book, *"Medical Malpractice: Understanding the Law, Managing the Risk"* published in 2006 by World Scientific Publishing Co., and available at Amazon.com. You may contact the author, S.Y. Tan MD, JD, at email: siang@hawaii.edu or call (808) 728-9784 for more information.

### References

1. Federal Rules of Evidence 1003.
2. Public Law 104-191; 45 C.F.R., Part 160 and Part 164. Detailed information on HIPAA is available at the Health and Human Services website, www.hhs.gov.

# THE WEATHERVANE

RUSSELL T. STODD MD, CONTRIBUTING EDITOR

*Russell T. Stodd MD*

❖ **A PATRIOT MUST ALWAYS BE READY TO DEFEND HIS COUNTRY AGAINST HIS GOVERNMENT.**

The federal Health Resources and Services Administration apparently just discovered that the Medicare reimbursement system is out of whack. Among the vital sub-specialities that are disappearing is neuro-ophthalmology. In 1980 an initial consultation was $200 and follow-up visit was $90. Now almost 30 years later the same procedures allow a neuro-ophthalmologist 20 to 25% less. Similar disparities are seen in pediatric endocrinology and pediatric rheumatology with the predictable result that fewer physicians can afford to enter such practices. The process was set in motion in the 1990s when Medicare implemented a new system to set standard fees called the Resource Based Relative Value Scale (RBRVS) pushed by a Harvard medical economist, William Hsaio (remember him?). Of course, the real sinners here are the doctors themselves because not enough physicians objected. At this point the only salvation for doctors is to simply stop dealing with all third parties and make the patient responsible for dealing with Medicare and insurance carriers, a far too uncommon event.

❖ **AS YE SMOKE, SO SHALL YE REEK!**

An interesting study from the *Archives of Pediatrics and Adolescent Medicine* found that teenagers are less likely to become smokers in communities that have strong bans on smoking in restaurants. Dr. Michael Siegel of Boston University School of Public Health and his colleagues tracked 2,791 children ages 12 to 17 across Massachusetts. About 100 towns and cities have enacted a variable collection of anti-smoking laws that restrict smoking in workplaces, bars, or restaurants. The study found that strong bans had a bigger influence on whether smoking grew into a habit, and they reduced the teens' chances of becoming smokers by 40%. According to Dr. Siegel, "There is really no other smoking intervention program that could cut the rate of smoking almost in half."

❖ **SOMETIMES YOU GET A PAIR OF POOR FITTING GENES.**

There are about 2,000 people in the United States with Leber's congenital amaurosis No. 2, which is caused by a flawed gene from both parents. These patients cannot make a protein that is necessary to nourish the retina. The amaurosis (blindness) is often a part of a recessive genetic package including neurologic dysfunction and kidney disease. Gene therapy research at University College London and Children's Hospital of Philadelphia was performed on a group of six patients by injecting good copies of the necessary gene into their eyes. Three were improved while the others had no change. Importantly, none were made worse, so the way appears open to continue the experiment with larger doses and on younger patients. Researchers are very cautious with gene therapy because altering a patient's DNA has led to death and cancer in previous studies.

❖ **CARS COME IN THREE DIMENSIONS: HEIGHT, WIDTH, AND DEBT.**

If you or your employees use your new 2008 automobile more than 50% of the time, you can deduct $10,960 from your income as a business expense. To keep your accountant and the IRS auditor happy, maintain a log of dates, destinations, and mileage. For a used auto, the first year limit is $2,960, a difference of $8000 under the new law, so it appears wiser to go with a new model, such as one of those luxury vehicles like a Cadillac Escalade or Lincoln Navigator or Hummer. With the tax break perhaps you can afford the gasoline.

❖ **IT'S VERY UNFAIR TO EXPECT A POLITICIAN TO LIVE IN PRIVATE UP TO THE STATEMENTS HE MAKES IN PUBLIC.**

Senator Ron Menor was arrested for driving under the influence (DUI). He refused to perform the roadside sobriety test, but did blow into the blood alcohol measuring device. He admitted that he had a couple of small glasses of wine, but blamed his slow and erratic driving on a dislocated contact lens and that a bad ankle made him unable to perform the sobriety test. In the past Senator Menor has been supportive of legislation designed to curtail and punish DUI offenders, but apparently he believes that the law applies to others. To his credit Senator Menor made a public apology for his arrest to family, friends, and supporters. So, how many of our legislators have been arrested for DUI, and is it an occupational disease?

❖ **AGAINST STUPIDITY, THE GODS THEMSELVES FIGHT IN VAIN.**

A Roman Catholic priest in Parana, Brazil, wanted to break the record of 19 hours for staying aloft with party balloons. He outfitted himself in a thermal suit, carried his GPS and cellular phone. He inflated his 1,000 balloons with helium and set out skyward. After eight hours he failed to answer his telephone contact, and the GPS receiver showed him to be 30 miles out at sea. Subsequently, some balloons were found but no sign or contact with the priest. He was declared missing and recognized as a candidate for a Darwin award, an annual recognition of those who improve the genetic pool by removing themselves from it. But hey! The man's a priest and already had taken a declaration of celibacy, so no gain here.

❖ **TECHNOLOGY IS RAPIDLY FILLING OUR LIVES WITH DEVICES SMARTER THAN WE ARE.**

Ever creative Apple Inc. devised the Iphone with its lack of buttons, its music capability, and its web browser for busy professionals of all kinds. Robert Singer MD a busy neuro-vascular surgeon performs about 450 surgeries a year, and is somewhat of a techno-geek. He soon found that his Iphone could access his practice's electronic medical records system. The result is that he can review patients' x-rays, previous surgeries, lab reports, angiograms, and medical history while in the operating room. Previously, he prepared the night before his OR schedule, but now enjoys the freedom of instant up-dated information and evaluation of pertinent data. He is able to enter the operating room with greater confidence and a fresh state of mind about each patient.

❖ **MONEY DOESN'T GROW ON TREES, BUT SOME PEOPLE GET IT BY GRAFTING.**

The Senate Special Committee on Aging has proposed legislation mandating disclosure of consulting payments to surgeons. Five makers of orthopedic implants rewarded surgeon "consultants" with $221 million in 2007. Zimmer Holdings, Inc., Biomet Inc., Stryker Corp, Smith & Nephew, and DePuy Orthopaedics have agreed to disclose their payments in settling government allegations that they violated anti-kickback laws. Typically, a company rep would spend one or two hours in an operating room observing a surgeon implanting his company's device, and the company would pay the doctor for eight to ten hours of "training". Between 2002 and 2006 payments to surgeons from these companies came to more than $800 million. In fact the payments were rewards to surgeons for using a particular knee or hip implant, even when that implant wasn't necessarily the best for that patient. Neither the surgeons nor the companies have admitted any wrongdoing. Of course, nothing like this ever happens with eye surgeons, or does it?

❖ **HEY, SWEETIE! COME BAIT MY HOOK.**

In Port St. Lucie, Fla., Smokin' Em charter fishers were kicked out of the Marina that is owned by Fort Pierce City. The crew was made up of attractive young women, and the charter fee was $100 if they wore bikinis, and $150 if they removed their tops when they were out to sea. "They just acted as mates, and there was no touching," according to the manager. Right! The marina boss said he had no idea this was going on.

❖ **MARIJUANA IS NOT HABIT FORMING, UNLESS YOU MEAN LIKE EVERY DAY.**

In Houston a jury was being selected for a marijuana possession case. A break was taken and when one of the prospective jurors did not return, she was found outside on the court house steps smoking a marijuana cigarette. She was not selected for the jury.

❖ **ALL TOGETHER NOW, LET'S SING ALONG!**

For a mere $4.99 Nickelodeon Merchandising is selling a SpongeBob Squarepants rectal thermometer, which plays the SpongeBob theme song while inserted. Apparently the makers believe that the music will make the procedure more palatable (so to speak).

**ADDENDA**

❖ US Patent number 7,313,833 was granted for an emergency toilet system that can be built into the seat of an automobile, aircraft, or submarine.

❖ 17% of Republicans favor socialized medicine while 70% of Democrats are in favor- *Medical Economics*.

❖ Senator Barack Obama was asked what he might look for in a vice presidential running mate: "I would like someone who knows about a bunch of stuff." Wow! Now those are rigid demands!

❖ Gynecology is the only speciality that can replace a uterus, pound for pound, with catgut suture.

**ALOHA AND KEEP THE FAITH — rts■**

*Contents of this column do not necessarily reflect the opinion or position of the Hawai'i Ophthalmological Society and the Hawai'i Medical Association. Editorial comment is strictly that of the writer.*

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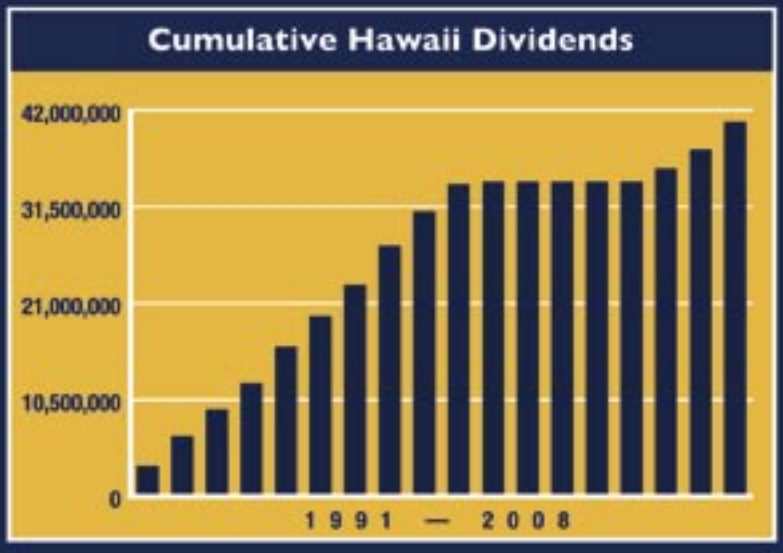


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