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Parent-Child Reading Interactions Among English and English as a Second Language Speakers in an Underserved Pediatric Clinic in Hawai'i

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Abstract

Purpose: The purpose of this study was to compare reading patterns between English-speaking and English as a Second Language (ESL) families in a health care setting in Hawai'i.

Methods: A cross-sectional study was performed at an underserved pediatric primary care clinic in Hawai'i. Caregivers of patients between the ages of 6 months to 5 years were asked questions regarding demographics and parent-child reading interactions. Respondents were categorized into English-speaking or ESL groups based on primary language spoken at home. Pearson χ^2 tests and Fisher exact tests were performed to compare demographic differences, reading frequency, and reading attitudes between groups.

Results: One-hundred three respondents completed the survey. Fifty percent were ESL. All ESL respondents were of Asian-Pacific Islander (API) or mixed Asian ethnicity. All Caucasians in the study ($n=9$) were in the English-speaking group. Between the English-speaking ($n=52$) and ESL ($n=51$) groups, there were no significant statistical differences in age or gender of the child, reading attitudes, or parent's educational status. Parents in the ESL group read to their children significantly fewer days per week than their English-speaking counterparts, had significantly fewer books in the home, and lived significantly fewer years in the United States.

Conclusion: The findings suggest that API immigrant families share similar attitudes about reading as English-speaking families in Hawai'i but have significantly fewer books in their household and read significantly less frequently. Physicians working with API populations should be aware that immigrant children may have fewer reading interactions and should counsel parents on the importance of reading daily.

Introduction

Reading plays an important role in childhood development. Studies have shown that reading to children in early childhood can lead to greater literacy in the later years.^{1,2} In addition, studies have shown that reading interventions during this period of emergent literacy may increase the chances of reading success in school.³ Parent-child shared book interactions have the additional

benefit of forming positive associations with books and reading,⁴ which may help facilitate learning in school. As such, the American Academy of Pediatrics (AAP) advises parents to start reading to their children daily from as young as 6 months of age.⁵

In contrast, illiteracy has a detrimental effect on future school performance. It may also contribute to increased rates of school dropout, teen pregnancy, delinquency, welfare dependence, and possibly substance abuse, that can in turn contribute to continuing poverty.⁶ In addition, adults with limited literacy have decreased health literacy and may have increased medication errors and increased hospitalizations.⁷ In the United States, it is estimated that more than 20% of adults read at the lowest level of proficiency,⁸ and two-thirds of children read below their grade level.⁹ Risk factors for poor reading proficiency include being an immigrant, speaking a language other than English, having less education, and living in poverty.⁸

In Hawai'i, illiteracy is a larger problem for children than in other parts of the country. Recent studies cite Hawai'i as second worst in the nation for failing to improve school performance.¹⁰ Although Hawai'i's public schools are diligently working to meet requirements set forth by the No Child Left Behind Act, in 2007 only about 25% of fourth graders and 20% of eighth graders met proficiency standards in reading.¹¹

Physicians have a unique opportunity to promote literacy to parents and children. Studies suggest that reading to children on a daily basis is more likely to occur if physicians encourage parents to do so.^{2,6,12} Moreover, past studies have shown that Caucasian parents of higher socioeconomic groups are more likely to read to their children than African-American and Hispanic parents in lower socioeconomic groups.¹³⁻¹⁹ Although level of English proficiency and culture have been studied to determine influences on reading interactions between parents and children, these studies were conducted predominantly in Hispanic and African-American populations. To the team's knowledge, no studies have

been published describing reading patterns in the immigrant API population in Hawai'i.

The purpose of this study was to compare reading patterns between English-speaking and ESL families in an underserved pediatric clinic in Hawai'i. Findings from this pilot project were intended to help provide clinicians with a better understanding of the Hawai'i-based API population at risk for poor reading proficiency. Greater insight will better prepare Hawai'i physicians to implement more effective interventions for high risk children in the pediatric clinic setting.

Methods

This study was conducted at an underserved pediatric outpatient clinic in Hawai'i where 100% of patients met the federal poverty level for annual income. This was a cross-sectional study where adult relatives and guardians of children between the ages of 6 months to 5 years were approached in the clinic waiting room and asked to voluntarily participate in a survey. Families of children with severe neuro-developmental disabilities (e.g., Down Syndrome, visual or hearing impairment, static encephalopathy) were excluded from the study. If more than one child in a family met inclusion criteria, the youngest child was chosen. Written consent was obtained from all participants. This study was approved by the on-site Institutional Review Board.

A validated survey instrument was modified for this study.¹⁸ Demographic questions included: child's age, respondent's ethnicity and educational status, number of people living in the home, language(s) spoken at home, primary language spoken at home, and number of years living in the United States. Attitudes about reading were assessed through questions that included: favorite activity to do with child, activities to make child successful in school, and reasons for not reading to their child. Additional questions asked for number of days per week respondents read with their children and number of children's books in the home.

Participants were categorized as ESL or English-speaking based on primary language spoken at home. Respondents with English as the primary language spoken at home were assigned to the English-speaking group; all others were assigned to the ESL group. Pearson χ^2 tests were used to compare demographic differences and reading frequencies between the two groups. Fisher exact tests were used to determine statistical differences in reading beliefs.

Results

Population: One-hundred three interviews were completed from February to July 2006. The majority of respondents were mothers (72%), followed by fathers (18%), guardians (4%), grandfathers (1%), and other relationships not listed on the survey (5%). The average age of children studied was 24.6 months (standard deviation (SD)=16.7). Fifty-three percent of the

Ethnicity	Percentage (%)
Other*	34.0
Chuukese	29.1
Caucasian	8.7
Samoaan	6.8
Marshallese	6.8
Hawaiian	5.8
Chinese	2.9
Filipino	2.9
African American	1.0
Mixed Hawaiian	1.0
Tongan	1.0

* "Other" representative of those with mixed ethnicities or ethnicities not listed on survey

Number of Books in the Home	ESL (n=51)	English-Speaking (n=52)
0	3	0
1-4	19	4
5-10	12	13
11-20	8	12
21-50	6	8
51-74	2	5
75+	1	10

Pearson χ^2 p<0.05

children were boys. Ninety percent of the population sampled were Asian, Pacific Islanders, or mixed Asian, with Chuukese (29%), representing the ethnicity most represented (see Table 1). The average household size was 4.4 persons (SD=1.3).

English was the primary language for 50% of respondents. Primary languages spoken in the ESL population sample included: Chuukese, Marshallese, Cantonese, Spanish, Pohnpei, Tagalog, Laotian, Russian, Urdu, and Tuvalan. Seventeen percent had only a grade school education, 61% graduated from high school, 20% graduated from college, and 2% had some graduate school. Eighty-three percent of the population spent three or more years in the United States. Twenty-two percent of respondents were interested in taking adult English classes.

Comparison of English and ESL groups: When comparing English-speaking and ESL respondents, there were no statistical differences in the age or gender of children in each group (p=NS, for both). Differences in the educational level of caregivers approached statistical significance (Pearson χ^2 p = 0.052), with only 10% of ESL respondents completing college, compared to 31% of English-speaking caregivers. Those who



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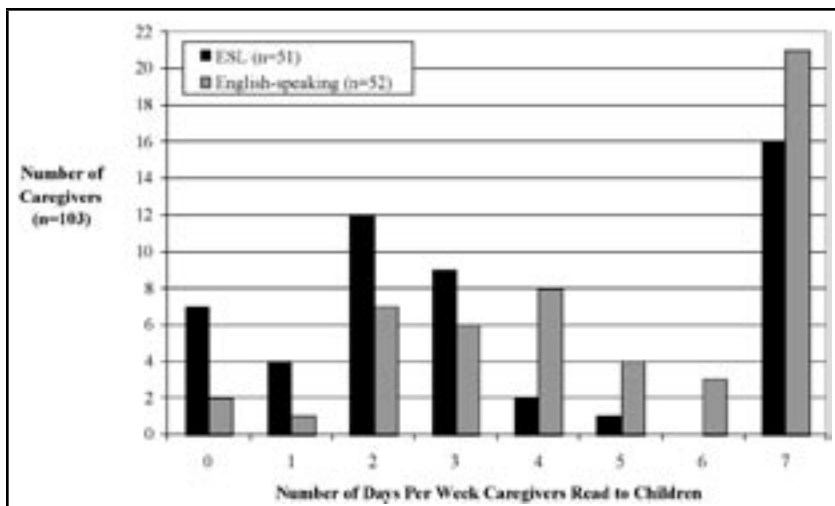


Figure 1.— Comparison of the Number of Days Per Week Children Read to by ESL vs. English-Speaking Caregivers

identified themselves as Caucasian, Hawaiian, or “other” were more likely to be native English speakers, while those who identified themselves as Chuukese, Marshallese, and Chinese were more likely to not speak English as their primary language. Significantly more non-English speakers lived in the United States for less than 3 years (Pearson χ^2 $p < 0.005$).

Reading at Home: Overall, most children in this clinic population had between one and 20 books in the home. The ESL group ($n=51$) had significantly fewer books at home compared to the English-speaking group ($n=52$, Pearson χ^2 $p < 0.05$, see Table 2). Of note, 67% of ESL households had 10 or fewer books in the household compared to 33% of English-speaking households. ESL parents reported reading to their children significantly fewer days per week than their English-speaking counterparts (Pearson χ^2 $p < 0.05$, see Figure 1). In addition, 45% of ESL parents reported reading to their children less than three days per week, compared to 19% of English-speaking parents. Only 31% of ESL parents, compared to 40% of English-speaking parents read to their children daily.

Attitudes Toward Reading: Fifty percent of English-speaking parents identified reading as their favorite activity to do with their child, compared to 35% of ESL parents (Fisher’s exact $p=0.095$). Fifty-two percent of English-speaking parents identified reading as something they could do to help their child be successful in school, compared to 35% of ESL parents (Fisher’s exact $p=0.066$). Only 4% of English-speaking parents, compared to 14% of ESL parents do not read to their child (Fisher’s exact $p=0.076$). For those who reported not reading to their children ($n=9$), 5 felt their children were too young, 3 had no books at home, and 1 had no time. Of note, 78% of caregivers who did not read to their child were from the ESL group. Reasons for not reading in this group were because they felt their child was too young or because they had no books in their home.

Discussion

This study’s findings suggest that parent-child reading interactions differ between English-speaking and ESL households in the underserved outpatient pediatric clinic population studied. Although both ESL and English-speaking parents believed reading interactions could contribute to future school success, ESL parents read to their children significantly fewer days a week than English-speaking parents and had significantly fewer books in their homes. In addition, while the majority of the study population identified reading as their favorite

activity to do with their child, less than 40% followed guidelines recommended by the AAP to read to their children daily.

Previous studies have reported that only about 50% of children under age 5 are read to every day.^{12,17} Results from this study concur that parent-child reading interactions remain suboptimal. The results from this study showed fewer parent-child reading interactions than previously reported for the state as a whole. Although the sample size is small and the study was limited to one site, the findings suggest that children at highest risk for infrequent parent-child reading interactions are API immigrants of low-income status, for whom English is not the primary language spoken at home. To the authors’ knowledge, no other studies have been reported on parent-child reading interactions among API immigrant households; hence further studies are warranted to study risk factors as well as outcomes in this target population.

Factors that have been found to be associated with increased parent-child reading interactions include Caucasian ethnicity and parent high school education.^{3,12,20} Although Caucasians represented only 10% of this study population, all Caucasians were in the English-speaking group, which reported significantly more parent-child reading interactions than the ESL group studied. Of note, the ESL group consisted of all Asian, Pacific Islander, or mixed Asian ethnicities, with a significant portion having lived in the United States for less than 3 years. This ESL group also had fewer parents with college level education than the English-speaking group (12% versus 33%, respectively). Although this value approached statistical significance ($p=0.052$), the authors recognize that the small sample size limits the ability to make further conclusions or implications.

Although the daily frequency of parent-child reading interactions was suboptimal, the majority of the caregivers reported reading to be their favorite thing to do with their child. Because reading to children in early childhood can lead to greater literacy in the later years,^{1,2} physicians working with this population should capitalize on this preference and proactively counsel parents to read more often to their children. It should also be noted that ESL parents who did not read to their children were more likely to report that they felt their children were too young. This may be partly due to differences in culture, differences in caregiver educational level, or inability to fully comprehend recommendations from pediatricians due to language barriers. Although the limited survey questionnaire did not allow for further investigation of why parents do not read to their children, physicians interacting with these high risk families should be alerted that ESL parents may not fully understand the rationale for the early introduction of reading. Although this study did not measure this outcome, education targeted at overcoming this barrier could prove helpful.

As an additional barrier, ESL caregivers in the study population spent less time in the United States and completed fewer years of secondary and post-secondary education than their native English-speaking counterparts. This is somewhat expected, as those who have lived in the United States longer would be more likely to assimilate and to learn English. In fact, 22% of respondents expressed interest in taking English classes. Hence, physicians working with families in this target population should consider that ESL parents may not feel as comfortable reading English-language books with their children due to a perceived lack of proficiency in the English language. Therefore, physicians interacting with this patient population should consider routinely asking parents if they are interested in attending ESL classes, and should consider obtaining resources to help these families receive books written in the family's native language.

Finally, not having children's books in the house was a reason identified by ESL caregivers for not reading to their children. Non-native English speakers had fewer children's books at home than their English-speaking comparison group. Although this study did not investigate why ESL households owned fewer books, possible reasons may include: 1) low socioeconomic status in immigrant households limiting their ability to buy books or 2) cultural differences with decreased emphasis on written language. More importantly, although no similar studies on API immigrant populations have been reported for comparison, previous studies do suggest that both ESL and English-speaking families who receive books from and are counseled about reading by their physician are more likely to have increased parent-child book interactions.^{18,21} Therefore, an intervention targeted at both distributing books and educating families, such as the Reach Out and Read (ROR) program, could potentially be an ideal way for physicians to help target efforts toward this at-risk population. Studies have shown that ROR interventions significantly increase the likelihood for parents to read aloud to their young children^{2, 6, 18, 21-26} and improve child language skills,^{15, 22, 24-26} even among multilingual or ESL populations.

There were several limitations of this study. Due to the limited number of respondents, the sample studied may not be accurately representative of the entire pediatric clinic population. Participants were randomly selected during the enrollment period; however, only about one-half to one-third of the total clinic population within the age range were represented. Although there were many more assigned patients to this clinic site, many patients at this clinic site do not seek care on a regular basis and therefore missed the opportunity to enroll. In addition, many caregivers at this clinic site do not speak English as their primary language and, therefore, may not have felt comfortable participating in a survey in English. Furthermore, these results were from only one pediatric clinic in Hawai'i and may not represent the total pediatric population in the state as a whole. However, no other studies have investigated reading patterns among API caregivers in Hawai'i. Hence, this study offers the Hawai'i community a point of reference at which to begin further investigations.

Future investigations will be targeted at implementing an ROR program at this pediatric clinic. Included will be the establishment of additional initiatives in the clinic waiting room to promote reading and the implementation of training to physicians and residents to

better educate them on how to educate families on the importance of reading to children.

In conclusion, the findings suggest that API children who do not speak English as the primary language at home have fewer books and are read to less frequently than children in English-speaking households. Hawai'i physicians should recognize that immigrant children in API populations may be at high risk for poor language development, resulting in reading failure at school. Literacy efforts should be especially targeted at ESL caregivers, as parents in this group are less likely to read to their children and more likely to need additional support, education, and counseling.

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Prognostic Factors and Utility of Scoring Systems in Patients with Hematological Malignancies Admitted to the Intensive Care Unit and Required a Mechanical Ventilator

Katsufumi Nishida MD and Melvin P. Palalay MD



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Abstract

Rationale: Mortality of patients with hematological malignancy requiring mechanical ventilation is high. Neither early prognostic indicators nor scoring systems that discriminate survivors from non-survivors to aid in end-of-life decision making have been identified.

Objective: To assess the outcomes, prognostic factors, and scoring systems of acute respiratory failure requiring endotracheal intubation in the intensive care unit (ICU) in patients with hematological malignancies.

Methods: Retrospective cohort study in the medical ICU of a tertiary hospital. Thirty-three critically ill patients with hematological malignancies requiring mechanical ventilation were analyzed for demographic data, ICU survival, type of malignancy, state of disease, reasons for hospitalization and ICU admission, peripheral blood parameters and scoring systems (APACHE II, SOFA, SAPS II, and MODS) during ICU stay. All recorded variables were evaluated for prognostic relevance by univariate and multivariate analyses.

Measurements and results: Overall ICU mortality was 74%. Univariate analysis revealed statistically significant differences in red blood cell count, hemoglobin, mean arterial pressure, coagulation studies, as well as the presence of oliguria, multi-organ failure, vasopressor requirement, pneumonia, blood product requirement. APACHE II, SOFA, and SAPS II scales also revealed similar statistical significance in outcome. However, multivariate analysis did not reveal any independent prognostic factors statistically. Among these, hemoglobin level appears to be the strongest trend ($p=0.0577$) for survival.

Conclusions: Mortality of patients with hematological malignancies requiring mechanical ventilation remains high. No single independent risk factor for ICU mortality was identified with multivariate logistic regression analysis. Prognostic scoring systems do not yield adequately reliable information to be used exclusively for end-of-life decision making in individual patients.

Introduction

With continued medical advances, the survival of patients with hematological malignancy has improved substantially, particularly due to novel and intensive

chemotherapeutic regimens, followed by bone marrow or peripheral stem cell rescue as well as improved supportive measures, including intensive care unit (ICU) care. Unfortunately, the use of aggressive chemotherapeutic regimens frequently results in life-threatening complications, such as neutropenia and septic shock, requiring transfer to the ICU for monitoring and advanced support, including mechanical ventilation. The reported hospital mortality rate of these patients reaches 42-50%,¹⁻⁴ rising to 75-85% when mechanical ventilation is required.⁵⁻¹⁰ In this circumstance, transferring a severely ill patient to the ICU for life support is often difficult decision. Due to the poor prognosis, the considerable costs, and the emotional burden endured by patients and family members, many intensivists are understandably reluctant to admit patients with hematological malignancy to the ICU. However, the reluctance to admit these patients to the ICU should not be justified without concrete evidence. The search for prognostic indicators that discriminate patients who are more likely to benefit from advanced or prolonged ICU support has been attempted numerous times in a variety of contexts.^{2,3,6,8,9,11-15} Unfortunately, reliable indicators have been elusive. Several retrospective studies have identified such particular risk factors; however, the results of these studies have often differed from each other. Poor outcome has been associated with leukopenia, need for vasopressors, need for mechanical ventilation, number of failing organs, and the presence of fungal infection.^{2,13,15} Surprisingly, bacteremia has been associated with better prognosis.² Requiring mechanical ventilation is well known to be a poor prognostic factor; however, a literature search reveals only a single study focusing on this population.¹⁴ In this study, scoring with the New Simplified Acute Physiology Score (SAPS II) system was found to be a useful tool for determination of ICU mortality risk. In general scoring systems, both prognostic scales and outcome measures, in the ICU have shown to be correlated with outcome in several

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studies.^{3,9,14} To determine outcome and prognostic factors in patients with hematological malignancy requiring mechanical ventilation, the authors examined ICU survival, peripheral blood parameters, treatment-related factors, and the value and limitations of several scoring systems for these populations.

Methods

After obtaining consent of the Queen's Medical Center Institutional Review Board, data for all patients with hematological malignancy who were admitted to the medical ICU at a single, tertiary care medical center, in Honolulu, Hawai'i between January 1, 2004 and December 31, 2005 were analyzed retrospectively. This 16-bed unit admits critically ill patients who are at least 16 years old. Ninety-two admissions were identified in this population of which 39 patients met our inclusion criteria, including mechanical ventilation. Patients with the following diagnoses were included: acute myeloid or lymphoblastic leukemia, chronic myeloid or lymphoblastic leukemia, lymphoma, multiple myeloma, aplastic anemia, and myelodysplastic syndrome (MDS). Charts were reviewed with regard to disease, treatment, and admission characteristics. The median age was 58 (range 21-92) years. Twenty-four (61.5%) were men. All patients required mechanical ventilation. Disease sub-classification and disease stage are shown in Table 1.

ICU Admissions

Two patients were admitted to the ICU twice during a single hospital admission. Admissions were considered separate if the patient spent at least 48 hours in the regular ward in between ICU stays. Reasons for ICU admission are shown in Table 1. These include respiratory failure (n=21), multiple organ dysfunction syndrome (n=6), gastrointestinal bleeding (n=2), circulatory shock (n=4), central nervous system complications (n=2), and status post cardiopulmonary resuscitation (n=4). Patients were admitted to the regular ward initially for the following reasons: while receiving chemotherapy (n=6), radiation (n=1), sepsis (n=7), fever (n=4), newly diagnosed hematological disease (n=3), neurological disorder (n=5), pneumonia (n=5), or other treatments (n=8). Median duration of ICU stay was 6 days (range 1- 29). Median duration of intubation was 158 hours (range 2-686). Twenty-six patients (66%) required vasopressor use; 4 patients (10%) required hemodialysis.

Statistical analysis

The primary outcome studied was all cause death in the ICU. Statistical calculations were performed using JMP software (SAS Institute, Inc, Cary, N.C.). Descriptive statistics were used for characterization of patient groups; mean (standard deviation) or median values (range of values) were given, depending on the type of

Table 1.— Patients' Characteristics		
	Patients	
	No.	Percent
Underlying diseases		
Acute myeloid leukemia	5	12.8
Acute lymphoblastic leukemia	4	10.3
Hodgkin's lymphoma	2	5.1
Aggressive non-Hodgkin's lymphoma	15	38.5
Indolent non-Hodgkin's lymphoma	3	7.7
Myelodysplastic syndrome	3	7.7
Chronic myeloproliferative disease	1	2.6
Chronic lymphatic leukemia	3	7.7
Multiple myeloma	2	5.1
Aplastic anemia	1	2.6
State of disease		
Complete remission	8	20.5
Partial remission	1	2.6
Refractory	11	28.2
Relapsed	9	23.1
Active	10	25.6
ICU admission diagnosis		
Multiple organ dysfunction syndrome	6	15.4
Respiratory distress	21	53.8
Circulatory shock	4	10.3
Gastrointestinal hemorrhage	2	5.1
Neurological disorder	2	5.1
Cardiopulmonary resuscitation	4	10.3
Reasons for death		
Respiratory failure	9	31.0
Septic shock	6	20.7
Circulatory shock	9	31.0
Cerebral vascular accident	2	6.9
Anoxic encephalopathy	2	6.9
Multiple organ dysfunction syndrome	1	3.4

ICU: intensive care unit

data and the fact of normal data distribution in the interval scale. Normal distributions were verified with the Shapiro-Wilk's test. Data concerning survivors and non-survivors was compared with Student's t test, Mann-Whitney U test and chi-square test. Data analysis was performed using the univariate and stepwise multivariate logistic regression method. Regarding scoring systems for prognostic measures, the Acute Physiology and Chronic Health Evaluation (APACHE II) and the SAPS II, were calculated during the first 24 hours following admission. Regarding scoring systems for outcome measures, the Sequential Organ Failure Assessment (SOFA) and the Multiple Organ Dysfunction Score (MODS), were calculated for all components of each scoring system during the entire ICU stay. The worst condition, in the maximum SOFA and MODS, was defined as the worst respiratory status by using PaO₂/FiO₂ that was measured every 48 hours during ICU stay. The amount of organ dysfunction/failure evolving after ICU admission was evaluated computing the total maximum SOFA and MODS scores minus the admission total SOFA and MODS scores, which are delta of SOFA

Table 2.— Analyzed Variables in Survivors and Non-Survivors			
	Survivors	Non-survivors	p value
Number of patients	10	29	
Age	60.5 (29-81)	58 (21-92)	n.s.
Male	5	19	n.s.
Female	5	10	n.s.
Smoking history	1	3	n.s.
ICU duration (days)	5.5 (2-19)	6 (1-29)	n.s.
Intubation period (hours)	52.5 (23-512)	72 (0.1-686)	n.s.
History of chemotherapy	9	20	n.s.
History of radiation	1	6	n.s.
History of BMT	1	2	n.s.
Presence of multiple organ failure	1	29	p=0.0160
Presence of septic shock	2	13	n.s.
Presence of leukopenia	4	17	n.s.
Presence of neutropenia	3	1	n.s.
Presence of oliguria	0	11	p=0.0215
Catecholamine use	4	22	p=0.038
Hemodialysis	0	4	n.s.
Presence of pneumonia	4	23	p=0.02
Blood product use	6	28	p=0.002
BUN	18 (7-78)	39 (5-88)	p=0.045557
Creatinine	1.1 (0.6-2.2)	1.3 (0.6-5.4)	n.s.
Glucose	136 (34.0)	137 (60.2)	n.s.
WBC	11.1 (0.1-15)	7.9 (0.1-157.5)	n.s.
RBC	3.94 (1.02)	3.24 (0.52)	p=0.007729
Hemoglobin	11.25 (8.8-15)	9.4 (7.3-14.8)	p=0.011386
Hematocrit	32.89 (9.68)	29.71 (6.11)	n.s.
Platelets	154 (16-391)	63 (5-401)	n.s.
Absolute neutrophil count	7.29 (0.08-85)	7.96 (0.04-93)	n.s.
Total bilirubin	1.8 (0.7-4.7)	1.9 (0.6-18.5)	n.s.
ALP	90 (64-386)	111 (12-348)	n.s.
PT	14.8 (12.4-17.5)	15.85 (12.8-23.8)	p=0.015064
PTT	33.2 (8.0)	45.4 (13.9)	p=0.012735
INR	1.25 (0.9-1.8)	1.5 (13)	p=0.027519
Blood culture	4	13	n.s.
Body temperature	99.4 (1.2)	99.7 (2.4)	n.s.
Heart rate	108.8 (18.9)	118.8 (23.7)	n.s.
MAP	80.1 (16.3)	69.1 (14.4)	p=0.025589
Respiratory rate	16 (10-30)	22 (14-24)	n.s.
SBP	110 (78-153)	104.5 (83-115)	n.s.
PaO ₂ /FIO ₂	194 (102-676)	235.5 (79-636)	n.s.
Urine output	2.3 (1.45)	2.37 (1.84)	n.s.
APACHE II score	20.8 (5.3)	25.3 (5.7)	p=0.036417
SOFA score	7 (4-14)	11 (3-18)	p=0.038863
SAPS II score	54.8 (13.3)	64.7 (13.4)	p=0.025339
MODS score	5 (4-13)	8 (2-13)	n.s.

ICU: intensive care unit, BUN: blood urea nitrogen, WBC: white blood cell, RBC: red blood cell, ALP: alkaline phosphatase, PT: prothrombin time, PTT: partial thromboplastin time, INR: international normalized ratio, MAP: mean arterial pressure, SBP: systolic blood pressure, APACHE: Acute Physiology and Chronic Health Evaluation, SOFA: Sequential Organ Failure Assessment, SAPS: Simplified Acute Physiology Score, MODS: Multiple Organ Dysfunction Score

and MODS respectively.

Linear regression analysis was used to evaluate the correlation between delta SOFA and MODS, and ICU mortality. ICU mortality was the independent variable in the analysis. Significance was assumed with $p < 0.05$.

Results

Overall ICU mortality for the patients in this study was 74%. Survivors had significantly lower APACHE II, SAPS II, and SOFA score. Data concerning the entire studied population and results of analysis of the differences between the survivor and non-survivor groups are presented in Table 2. Statistically significant differences were present for many of the studied parameters including levels of RBC (red blood cell count), hemoglobin, MAP (mean arterial pressure), coagulation studies, as well as presence of oliguria, MOF (multiple organ failure), vasopressor, pneumonia, blood products. Despite these findings, multivariate logistic regression revealed no independent predictor of survival. However, hemoglobin level appears to be the strongest trend ($p = 0.0577$) for survival in this patient population.

The association between mean delta SOFA and MODS, and mortality followed a linear pattern with the statistical significance (Fig. 1 and 2).

Discussion

The purposes of this study were to identify the outcome of acute respiratory failure requiring intubation and ICU admission in patients with hematological malignancies and to identify prognostic factors associated with the outcome. The authors are interested in the value and limitations of several scoring systems for these populations. The summary of characteristics of each scoring system is shown in Table 3.

Early predictive factors related to survival of ICU admission and mechanical ventilations were: RBC, hemoglobin, MAP, coagulation studies, oliguria, MOF, vasopressor requirement, pneumonia, blood product requirement, APACHE II, SOFA, and SAPS II score. Previous studies have analyzed the prognostic factors for survival, not only for mechanically ventilated patients but also for patients without ventilator support. There is one study that has examined the initial prognostic factors among patients who required mechanical ventilation. In this study the ICU mortality rate was 65%.¹⁴

In this study group, mortality rate in ICU reached 74%. The result is consistent with hospital mortality

Table 3.— Characteristics of Scoring Systems Used for Patient Assessment in Intensive Care Unit (ICU); Parameters and Methods of Assessment

Acute Physiology and Chronic Health Evaluation (APACHE)	New Simplified Acute Physiology Score (SAPS II)	Sequential Organ Failure Assessment (SOFA)	Multiple Organ Dysfunction Score (MODS)
Presence of chronic organ insufficiency of immunodepression	Type of admission	Respiration (PaO ₂ /FiO ₂ ratio)	Respiration (PaO ₂ /FiO ₂ ratio)
Age	Presence of chronic disease (hematological malignancy, metastatic carcinoma, AIDS)	Circulation (MAP or vasopressors usage and dose)	Renal function (serum creatinine)
Circulation (MAP ¹ and heart rate)	Age	Renal function (serum creatinine concentration or diuresis)	Liver function (serum bilirubin level)
Respiration (respiration rate and PaO ₂ or (A-a)O ₂ gradient ²)	Circulation (MAP and heart rate)	Coagulation (thrombocyte number)	Circulation (PAR ⁴)
Arterial blood gas analysis (pH and HCO ₃ level)	Respiration (PaO ₂ /FiO ₂ ratio)	Liver function (serum bilirubin level)	Hematologic (platelet count)
Serum ions levels (sodium and potassium)	Renal function (serum urea/BUN and urine output)	CNS function (Glasgow Coma Scale score)	Neurologic (Glasgow Coma Scale)
Renal function (serum creatinine)	Liver function (serum bilirubin level)		
CNS ³ function (Glasgow Coma Scale score)	CNS function (Glasgow Coma Scale score)		
Peripheral blood parameters (leukocyte number and hematocrit)	Serum ions levels (sodium and potassium) Level of HCO ₃		
Body temperature	Leukocyte number Body temperature		

1. Mean arterial pressure, 2. Alveolar-arterial oxygen gradient, 3. Central Nervous System, 4. Pressure-adjusted heart rate; PAR = heart rate x right arterial pressure/mean blood pressure

rates reported in the past; 42% to 50%,¹⁻⁴ and 75% to 85% when mechanical ventilation was required.⁵⁻¹⁰ Seventy-four percent mortality rate reported in this study is compatible with the subgroup analysis of patients who required mechanical ventilation in the past studies. In addition, this reported mortality rate is higher compared to those of a previous study targeting a similar population requiring mechanical ventilation,¹⁴ which the reported mortality rate was 65%. A probable explanation of this discrepancy is use of NIPPV (noninvasive positive-pressure ventilation) with excluded patients in this study. Fourteen of 55 excluded patients required NIPPV instead of mechanical ventilation. The addition of NIPPV to standard therapy in patients with acute respiratory failure has been shown to improve survival and decrease the need for endotracheal intubation.¹⁶⁻¹⁸ NIPPV is especially effective for chronic obstructive pulmonary disease patients.¹⁷ However, this favorite intervention might be applicable to hematological malignancy patients according to this study. Furthermore, 5 excluded patients chose a “do not intubate (DNI)” status.

Multivariate analysis did not reveal any independent prognostic factors statistically. However, hemoglobin level appears to be the strongest trend (p=0.0577) for survival. Several patient and disease related factors have been shown to be associated with poor survival: age,^{9,19} necessity of vasopressors, leukopenia, urea of >0.75g/L², and C-reactive protein.³ Age was not a risk factor in this study.

Patients with a mechanical ventilator in ICU often develop other organ failures, such as cardiovascular, renal, and coagulopathy. In this study, MAP, coagulation studies, oliguria, and vasopressor requirement were statistically significant parameters with univariate analysis; however, they were too small to manifest as independent risk factors of death in the multivariate analysis. Benoit et al. stated that the necessity of vasopressor administration and level of urea exceeding 0.75 g/l were independent predictors of death in ICU.²

These findings were not observed in this study.

Certain peripheral blood parameters, such as RBC, hemoglobin, coagulation studies, had statistical significance between survivors and non-survivors with univariate analysis. Hemoglobin level showed the strongest trend (p=0.0577) with multivariate analysis. Literature review revealed various results of analyses concerning peripheral blood parameters. Benoit et al showed that leukopenia might be an important adverse prognostic factor.² Other authors did not find similar relationship.

The authors examined four kinds of scoring systems, APACHE II, SAPS II, SOFA, and MODS in this population. APACHE II, SAPS II, and SOFA demonstrated statistical significance between survivors and non-survivors with univariate analysis. In the studies of Kroschinsky³ and Owczuk,¹⁴ SAPS II score was an independent risk factor for ICU mortality in the analyzed group. Owczuk et al analyzed a population of patients with hematological malignancies admitted to and mechanically ventilated in the ICU and demonstrated that SAPS II score was an independent predictor of death.¹⁴ Kroschinsky examined all ICU patients with hematological malignancies, both ventilated and non-ventilated, and reached a similar conclusion.³ However, it was not observed in this study in multivariate analysis. Moreno et al used the maximum SOFA score to quantify organ dysfunction/failure in the ICU with a prospective, multi-center study. They concluded that total maximum SOFA score and delta SOFA can be used to quantify the degree of dysfunction/failure already present on ICU admission, the degree of dysfunction/failure that appears during ICU stay and the cumulative insult suffered by the patient.²⁰ The amount of organ dysfunction/failure occurring after ICU admission (delta SOFA) also showed a strong correlation to outcome. The search for early prognostic indicators that discriminate patients who are more likely or less likely to benefit from advanced or prolonged ICU support has been attempted. Unfortunately, finding

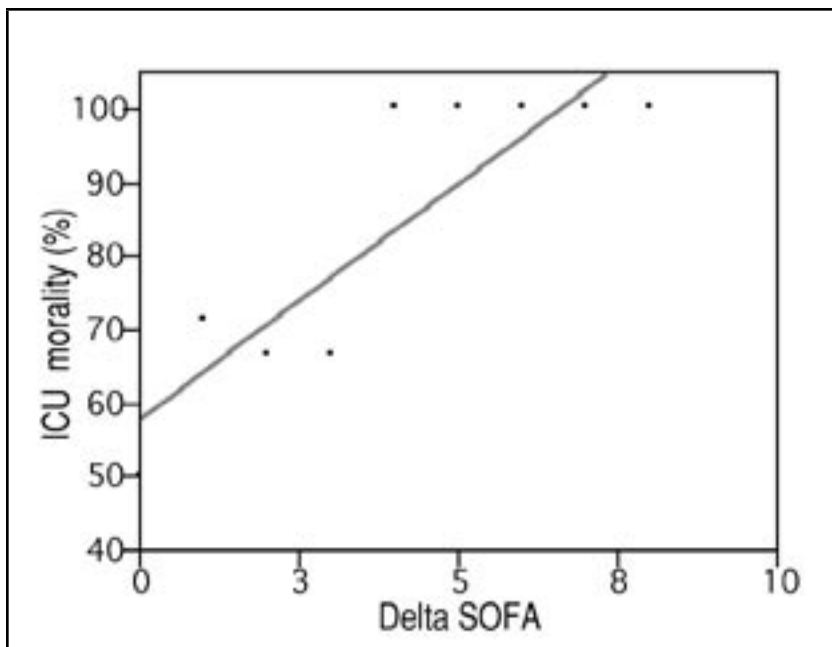


Figure 1.— Delta SOFA score and ICU mortality. A linear relation exists between delta and SOFA and ICU mortality. Multiple R: 0.881, R square: 0.776, SOFA: Sequential Organ Failure Assessment, ICU: intensive care unit

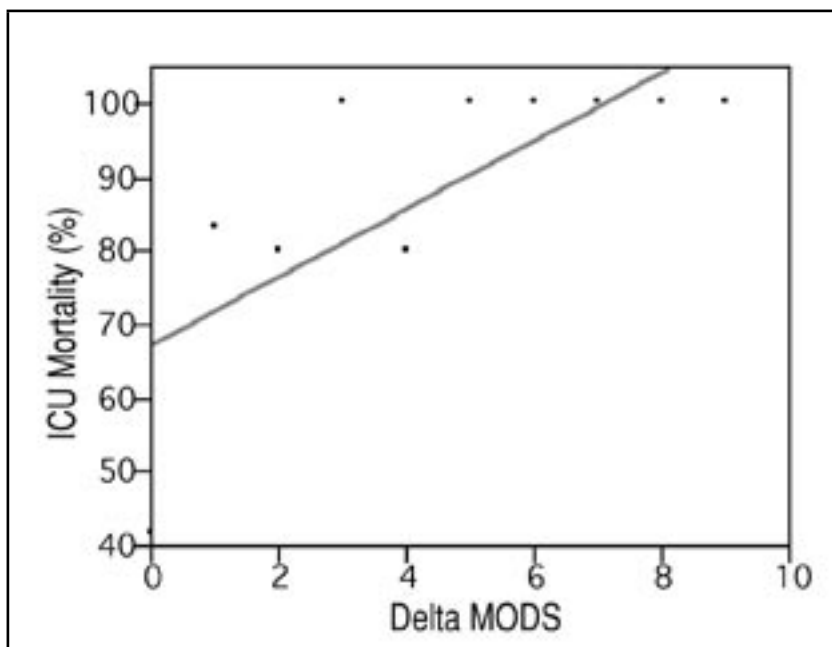


Figure 2.— Delta MODS score and ICU mortality. A linear relation exists between delta and MODS and ICU mortality. Multiple R: 0.746, R square: 0.557, MODS: Multiple Organ Dysfunction Score, ICU: intensive care unit

such indicators seems to be difficult. Several retrospective studies have identified such risk factors; however, the results of these multiple studies often differ from each other. These discrepancies are likely due to heterogeneous population, different criteria for ICU admission, and difference in therapeutic intervention. Several causes of random misclassification and systematic error (bias) result in inaccurate prognostic scores. They include the calculation of higher scores when more frequent blood work is done and the variability of what is designated as the

“first 24-hour period” after ICU admission. Inappropriate designation of chronic health points and assessment of maximal neurologic deficit in sedated intubated patients are common problems. In addition to the above limitations, one must have a good understanding of the limitations that are intrinsic to these prognostic systems in order for them to be used accurately and effectively. It is important to understand the details of their derivation and validation. The population of patients that are used to develop these models may not necessarily be relevant to other targeted patient populations. The model derived several years previously may no longer reflect current practice patterns and treatment. Above all, many studies, including this, are retrospective and might be biased. Therefore, a large scale, prospective, multi-center study is warranted to find more reliable prognostic factors.

In addition to mortality, health-related quality of life (HRQOL) has increasingly been claimed as an important and entire outcome variable of interest.²¹ Indeed, patients take both the burden of treatment and the functional outcome into consideration when deciding whether or not to accept treatment.²² Several studies have attempted to determine the effects of critical illness on HRQOL. However, the results of these studies have often differed from each other. Some studies²³⁻²⁵ have reported impaired HRQOL following critical illness, others^{25,26} have shown that a slow return to pre-morbid HRQOL occurs. In addition, the magnitude of recovery may differ among the different domains.²⁷ Therefore, regarding survivors of intensive care, it is important to evaluate not only duration of life but also HRQOL in both short and long term.

Conclusion

Prognostic scoring systems do not yield adequately reliable information to be used exclusively for end-of-life decision-making in individual patients. Many studies indicated that scoring system prognostic information may be inaccurate. As summarized by the Society of Critical Care Medicine’s Ethics Committee, “the use of scoring systems as a sole guide to making decisions about whether to initiate or continue to provide intensive care is inappropriate”²⁹ and at the current time, remains so.

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Factor XIII deficiency (Fibrin stabilizing factor)

Robert T.S. Jim MD



Robert T.S. Jim MD

Abstract

Factor XIII deficiency (Fibrin stabilizing Factor or FSF) is a rare coagulation defect. The only patient believed to have this disorder in Hawai'i is presented in this report.

Case Report 1

FSF is necessary to stabilize the fibrin clot in the last stages of coagulation. It was first discovered in the laboratory in 1970. The incidence is about 1 case per million. For the population of a million in Hawai'i, the patient reported fulfills the expected incidence. The patient in this report was of Japanese ancestry and FSF deficiency has been found in the Japanese. The strong history of consanguinity found in this patient suggests a genetic inheritance. The patient's ancestors originated from Oshima Island, a small island off the coast of Japan of about 300 inhabitants where inbreeding was prevalent. The patient's brother had probably died of CNS bleeding. Despite frequent clinical bleeding episodes, mostly soft tissue, joint bleeding was minimal without residual joint deformities. Of all the varieties of hemophilia, CNS bleeding is most common in FSF deficiency as occurred in this case report. Testing of family members in this report did not reveal any gross deficiency of FSF. Either a deficiency was not present or the testing technique was insensitive to very mild deficiency of FSF. Spontaneous mutation resulting in FSF is always a possibility. Small amounts of FSF are adequate for hemostasis. In the patient after monthly infusions of a single unit of fresh frozen plasma (FFP) the bleeding episodes ceased. The patient's CNS bleeding occurred when the monthly FFP infusions were not given and after lifting a heavy object.

Case Report 2

The patient was a 19-year-old single Japanese man. He was first seen in 1971 for evaluation of lifelong minor bleeding episodes, involving his muscles, shoulders, hips, knees, and ankle joints without residual joint stiffness or deformity. The bleeding episodes were all of mild severity and short duration. The patient had excess bleeding from cuts in addition to bruises. The bleeding episodes occurred about every 4-6 months.

Past medical history revealed that in 1970, the patient was said to have a prolonged plasma partial thromboplastin time. The patient was treated on the Big Island as a classical hemophiliac and was given weekly anti-hemophilic globulin (single vial) I.V. injections with the bleeding episodes. In addition, the patient was slow in healing from cuts and injuries. The patient had post-circumcision bleeding and in childhood was diagnosed as having Factor XIII deficiency (classical hemophilia).

Family History revealed that a 4-year-old brother died of "brain hemorrhage." A brother was aborted at 3 1/2 months. A sister died at the age of 3 days of "liver trouble." There was consanguinity in the family tree (see Figure 1). The family members came from Oshima Island, located 30 miles off the shore near Hiroshima. In this community of about 300 inhabitants, intra-family marriage was common.

Systemic review was otherwise non-contributory.

Physical examination revealed a slightly obese, well-developed, well-nourished man in no acute distress. A small 2 x 3 cm hematoma was found over the left forearm. Vital signs were normal. There was no adenopathy or hepato-splenomegaly. The rest of the physical examination was normal.

Subsequent course: On May 20, 1988, after lifting a heavy box, the patient suddenly developed headache, confusion, slurred speech, salivation, drowsiness, weakness, and numbness of the left face, body extremity and temperature of 101°F. Lab studies revealed WBC 22,100/cmm, Hg 6.6 gm, platelet count 323,000/cmm, prothrombin time 12.5 seconds (normal), PTT 26 seconds (normal), clot retraction normal, no Factor XIII activity by the clot solubility test in 5 molar urea. Mixture study was negative for Factor XIII inhibitor (circulating anticoagulant). Heat CAT scan revealed a right basal ganglia temporal intra-cortical hematoma with minimal shift. Twelve units of FFP were given over a 48-hour period. Subsequently, his speech became normal and normal function of the left arm slowly returned, but, the left leg still showed marked weakness. Subsequent study revealed small factor XIII activity present 3 weeks after infusion of a single unit of FFP. Between 1972-1989, a total of 160 units of FFP were given.

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Course: Between 1971-88, similar episodes of bleeding occurred in the shoulders, arms, forearms, hands, thighs, knees, ankles, urine (hematuria) after straining, lifting heavy objects and sometimes, spontaneously. These bleeding episodes were controlled by giving a single unit of FFP. Beginning in February, 1996, a single unit of FFP was given every 3 weeks, which effectively prevented bleeding episodes. Between April 4, 1988 and May 20, 1988, he did not receive FFP.

Discussion

Factor XIII deficiency is a rare coagulation deficiency (1-2). It is also called fibrin stabilizing (FSF) deficiency. It occurs about 1 case in a million population. The patient reported is the only known case of Factor XIII deficiency in Hawai'i.

FSF is the last coagulation factor in the clotting cascade. It stabilizes the formation of fibrin after it is formed from fibrinogen. It is diagnosed by the clot solubility test in 5 molar urea. The clotting time, prothrombin time, partial thromboplastin time, platelet count, bleeding time, clot retraction, and thrombin time are all normal. Therefore, the diagnosis is often not detected by the usual coagulation parameters.

In 5 molar urea, the fibrin clot is quickly dissolved in Factor XIII deficiency, whereas the normal fibrin clot remains stable for many hours and days. The rapid clot dissolution in 5 molar urea (qualitative analysis) in the patient reported was verified by severe quantitative reduction in the Factor XIII level on many occasions. High or low levels of fibrinogen can cause false positive 5 molar urea solubility results, but the fibrinogen level in the patient reported had only minimal elevation. The normal thrombin time in this patient excluded any dysfibrinogenemia disorders.

The genetic defect is not sex-linked as in classical hemophilia. Factor XIII is made mostly in the liver. There can be antibodies against Factor XIII by certain drugs, monoclonal antibodies, Henoch-Schoenlein disease, liver disease, ulcerative colitis, and idiopathic causes.

Clinical bleeding occurs into the skin, muscle, joints, urine, GI tract, and CNS. Bleeding into the joints is not followed by severe joint deformities. The minimum hemostatic effective is 1-2% and any level over 1-2% is sufficient to prevent bleeding.

Therapy is to give fresh plasma or cyro-precipitates as just a single unit of FFP can raise the level over 1-2% to control clinical bleeding. A single unit of FFP will last 3-4 weeks before the plasma FSF falls to 1-2%.

Summary

A 19-year-old Japanese man is reported with a rare coagulation defect, the only known case of Factor XIII deficiency in Hawai'i. He had many clinical bleeding episodes since birth in his shoulders, arms, forearms, hands, thighs, knees, urine, and central nervous system.

Laboratory Studies	
Urinalysis and CBC	normal
Platelet count	242,000/cmm
Bleeding time	3 minutes (normal)
Clot retraction	normal
Prothrombin time	100% (normal)
Partial thromboplastin time	(PTT) 71 seconds (control 70 seconds)
Fibrindex (thrombin time)	normal
Rumpel-Leede Tourniquet test	normal
Factor XIII assay	102% (normal)
Factor IX assay	68% (normal)
Factor XIII assay	abnormal, rapid fibrin clot dissolution in 5 Molar Urea in 10 minutes consistent with deficiency of factor VIII.
Fibrinogen	442mg (normal 200-400 mg)
Quantitative Factor XIII	4-14% (normal 57-192%)
Assay	3 determinations done at Colorado Laboratories with low value of 4.9, & 11% 8 determinations done at Quest Diagnostic Nichols Institute, CA with values obtained between 4-14%

Additional Laboratory Studies		
1974	Chest x-ray	negative
1975	IVP	negative
1978	G.I. series	small hiatal hernia with 4 mm duodenal ulcer
	Gall bladder x-ray	negative
	Factor IX assay	70% (normal)
	Platelet factor 3 release	(normal)
	Platelet aggregation with adenosine phosphate, epinephrine, ristocetin, all normal	
1979	Mixture study for circulating	negative
	Anti-coagulant	
1984	IVP	negative
1986	TLV II	negative
1988	HIV	negative
	T4/T8 ratio 0.9	(normal 0.7-2.8)
1989	SGOT, SGPT, serum bilirubin	all normal
	Serum ferritin 579 ng (slight elevation)	

All of his routine coagulation studies were normal including the bleeding time, platelet count, clot retraction, prothrombin time, partial thromboplastin time, thrombin time, and fibrinogen level. Diagnosis was made by the solubility of his fibrin clot in 5 molar urea and confirmed by low quantitative levels of Factor XIII. He responded well to therapeutic infusions of fresh frozen plasma and cryo-precipitates.

See Figure 1: Family Tree Factor XIII Deficiency on p.273.

Continues on p. 273



Establishing an Institute for Childhood and Adolescent Obesity Research and Education

Claudio Nigg PhD; Cynthia Sterkenburg, MPH; Office of Public Health Services, John A. Burns School of Medicine and Raul Rudoy, MD, MPH; Chair, Dept. of Pediatrics, John A. Burns School of Medicine

Rates of overweight adolescents and children have been increasing over the last two decades in the United States. Results from the 2003-2004 National Health and Nutrition Examination Survey (NHANES) indicate that an estimated 17% of children and adolescents ages 2-19 years are overweight.¹ Over the past 30 years, the prevalence of overweight has doubled among pre-school aged children and adolescents and tripled among children aged 6 to 11.

Hawai'i is no exception to this trend.² A study of the 10,199 children entering kindergarten in Hawai'i public schools concluded that 28.5 percent were either at risk (85 percentile, age adjusted) or overweight during 2002-2003. The magnitude of the problem was further highlighted when the results were compared to a 1984 study that indicated no significant difference in under or over nutrition in Hawai'i's school children.³ This data is particularly disturbing because while overweight in childhood is strongly predictive of obesity in adulthood, most obese adults were at a healthy weight when they were children.⁴ Thus, there is a strong probability that there will be far greater prevalence of obese adults in Hawai'i as these younger cohorts age, and the corresponding wide-ranging health problems associated with adult obesity will afflict even more people unless far-reaching measures are taken now to reduce childhood obesity.

The prevalence of overweight is considerably greater among youth from racial/ethnic minority backgrounds and of lower socioeconomic status. Chai et al⁵ research reported large disparities between Native Hawaiian youth and NHANES data. The authors compared overweight prevalence to NHANES statistics and found that the Native Hawaiian youth (32-35%) had more than double the national overweight rates in all ages and for both genders. These data highlight the importance of ethnic and cultural consideration when addressing pediatric weight management issues.

Childhood overweight has detrimental physical and mental health sequelae. About 60% of 5 to 10-year-old overweight children show at least one physiological cardiovascular disease risk factor. Researchers estimate that one-third of all US children will develop Type 2 diabetes at some point in their lives.⁶ Additionally, persistently elevated blood pressure occurred approximately 9 times more frequently among overweight children.⁷ Further, overweight children are more likely than their peers to experience negative social and psychological consequences including discrimination, stigmatization, and low self-esteem. By the time children reach middle school, more than 20% of them are overweight. Although there is general public awareness that overweight and obesity have significant and troublesome health consequences, efforts have not been mobilized to challenge this alarming problem. Preventing more children from becoming overweight is crucial to the health of Hawai'i and of the nation.⁸

Because adolescent overweight is the best single predictor of adult obesity,⁹ the health care system will face an epidemic of obese and overweight adults who are at risk of prematurely developing chronic diseases including heart disease, stroke, osteoarthritis, and some forms of cancer.¹ Individual, social, and environmental approaches are insufficient to prevent and intervene on child and adolescent obesity. There is an urgent need to provide education to medical students, residents, and physicians to become familiar with this serious and rapidly growing problem.

Further health care provider education and research in childhood and adolescent obesity are crucial to understand clearly and develop methods to control the epidemic. Unfortunately, there is a paucity of medical education programs in Hawai'i related to this issue. Needed is a comprehensive program that will facilitate ongoing education and research for the prevention and care of childhood and adolescent obesity. This year, a group of individuals, representing different sectors of the population (see below), met for two days to examine the idea of coordinating efforts to control this overwhelming problem and to explore the possibility of creating a nucleus for research, medical education, and health care for overweight children and adolescents.

The group recommended the creation of an *Institute for Childhood and Adolescent Obesity Research and Education* under the sponsorship of the Department of Pediatrics at JABSOM. The Institute defined its mission: "To provide leadership in education and research to better understand and combat the obesity epidemic and to treat and improve the life of the children and adolescents with complications of obesity."

The goals of the Institute will be:

- a) to serve as a repository of childhood and adolescent obesity research projects conducted in Hawai'i;
- b) to guide granting agencies and foundations regarding research needs in the area of childhood and adolescent obesity for the state of Hawai'i;
- c) to provide comprehensive health care to children and adolescents with co-morbidities induced by obesity;
- d) to serve as a center for the health professions, students, residents, and health care providers in the area of childhood and adolescent obesity;
- e) to conduct research from prevention to treatment of childhood and adolescent obesity.

Such an Institute will bring together an interdisciplinary group whose goals are to reduce the incidence of obesity in Hawaiian children by:

- 1) improving the level of education and research in this area (through collaborative research, and interdisciplinary education), and by
- 2) disseminating information.

The establishment of an Institute is the first stage of development. It is anticipated that the Institute will become a reality next year and will open its doors to research and education programs. It will represent a necessary step in the control of the obesity problem of children and adolescents in the state of Hawai'i.

Acknowledgement

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“Factor XIII deficiency” from p. 271

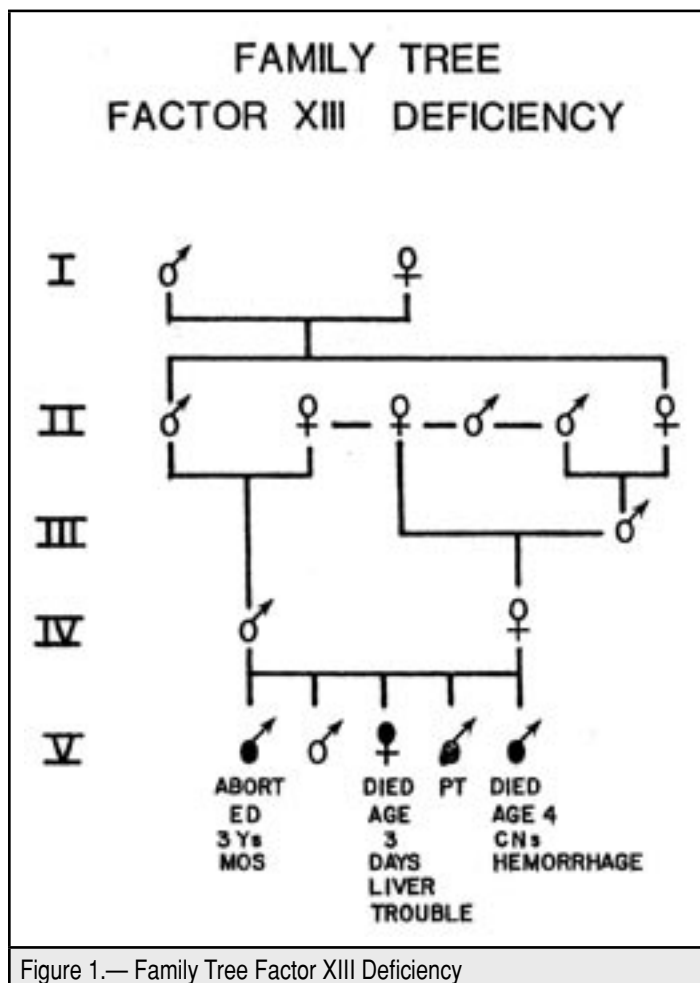


Figure 1.— Family Tree Factor XIII Deficiency

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Korean Cancer Incidence in Hawai'i: A Population in Transition

**Alana D. Steffen PhD, Prevention and Control Program, Cancer Research Center of Hawai'i; and
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Cancer incidence varies among the diverse ethnic groups in Hawai'i. The cancer disparities may be due, in part, to the fact that Hawai'i is largely comprised of populations who arrived at different times, who have differing risks related to their place of origin, and who vary in level of acculturation. Past study of migrants to Hawai'i from China, Japan, and the Philippines¹ has been useful in understanding cancer etiology due to differences in environmental exposures between the home and host countries. Comparison of the risk of cancer by ethnicity also aids cancer prevention and control efforts by identifying health disparities. The cancer incidence and mortality was reported in Hawai'i for Caucasian, Chinese, Filipino, Japanese, and Native Hawaiian subpopulations from 1975-2000.² The Hawai'i cancer incidence rates have been updated through 2005, and the cancer incidence for Koreans in Hawai'i will be described here.

Koreans are a small but growing population in Hawai'i. Korean immigration to Hawai'i began 105 years ago when the first 97 Korean laborers arrived to work on sugar cane farms in 1903. The 1910 US census indicated that 4,500 Koreans were living in Hawai'i, and this had increased to 7,000 by 1950.³ Immigration laws enacted in 1924 restricted Asian immigration to the United States until reform in 1965, which resulted in more middle class, college educated professionals from South Korea immigrating to the United States. Further changes in the US immigration laws in 1976 resulted in a gradual increase in Koreans from lower-class backgrounds coming to America.⁴ As of the 2000 census, there were approximately 28,600 Korean residents in Hawai'i, about 2.4% of the state's population, 60% of whom were born in Korea. Because of the varying levels of acculturation, it is expected that Koreans in Hawai'i would be heterogeneous with regard to their cancer risk.

Method

The Hawai'i Tumor Registry (HTR) maintains a database for all reportable cancer diagnoses for the state of Hawai'i, including demographic, tumor, and survival information. HTR is one of the 18 members of the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program. Incidence rate numerators were the number of cancer cases from 1975 through 2005, grouped by year of diagnosis (5 year groups), age (5 year groups), sex, and ethnicity. Incidence rate denominators were the population sizes for Hawai'i by the categories above. The US 2000 census provided detailed counts by ethnic/sex/age groups and was used as the denominator for that year. For census years in which the ethnic breakdown was not as detailed or for intercensal years, the denominators were computed as follows. The population size by age/sex group from the US census was apportioned to ethnic group based on data from the Hawai'i Health Survey,⁵ an annual household survey conducted by the Hawai'i State Department of Health (DOH). The DOH counts were subject to yearly variation due to sampling error and were smoothed using a k-nearest neighbor approach.⁶ Cancer incidence rates are age-adjusted to the 2000 US population. Due to the small population of Koreans in Hawai'i and,

thus, the number of cancer cases, this discussion is limited to all cancers combined, as well as the most prevalent cancers among this population: breast, prostate, colorectal, lung, stomach and liver.

Cancer Incidence in Hawai'i and Korea

To aid in the interpretation of the cancer incidence rates for Koreans in Hawai'i, the ratio of rates for the state of Hawai'i for years 2000-2005 and those of Korea for years 1998-2002⁷ are presented in Table 1. Hawai'i has higher overall rates for Koreans, but lower rates for stomach cancer and liver cancer in men. Cancers of the prostate, breast, and colorectum are higher in Hawai'i, however these rates are increasing in Korea.⁸⁻¹⁰ Lung cancer rates are similar for men and much lower for women in Korea than in Hawai'i.

Cancer Incidence of Koreans in Hawai'i

Among Koreans living in Hawai'i, 2362 (1061 men and 1301 women) cancer diagnoses from 1975-2005, with 672 of them occurring from 2000-2005. Figures 1 and 2 show the Korean overall cancer incidence rates compared to the state of Hawai'i, by sex. For women, the Korean rate increased steadily from 1985 through 1999 and then declined. However, the 2000-2005 rates for Korean women in Hawai'i is higher than the general state rate and is one of the highest rates for all female ethnic groups. Rates for Korean men increased from 1975 through 1994 then showed a steady decline through 2005. In 2000-2005, Korean men have a cancer incidence rate similar to all men in Hawai'i.

Koreans in Hawai'i experienced a similar increase in breast and prostate cancer rates since 1975 as other groups in the state, although their rates were somewhat lower from 1975 through 2005. Overall state and Korean incidence rates for Hawai'i 2000-2005 are presented in Table 2. Colorectal cancer rates for women showed a consistent pattern of elevated risk since 1985 (Figure 3), and this rate is higher than any other major ethnic group (the rate in Japanese is 49 per 100,000). Since 1985, men have a more variable pattern of elevated colorectal cancer compared to the state total (Figure 4). The 2000-2005 estimate is the highest among men, second to Japanese at 77 per 100,000. Lung cancer incidence among Korean women increased from 1990 through 1999 and has remained above the state total since then, although the rate has started to taper off

Table 1.— Ratio of Cancer Incidence Rates for Koreans from Hawai'i, 2000-2005 to Korea, 1996-2002

Site	Men	Women
All	1.1	1.8
Colorectal	1.6	2.2
Lung	0.8	2.9
Prostate/Breast	7.2	3.7
Stomach	0.3	0.7
Liver	0.6	1.1

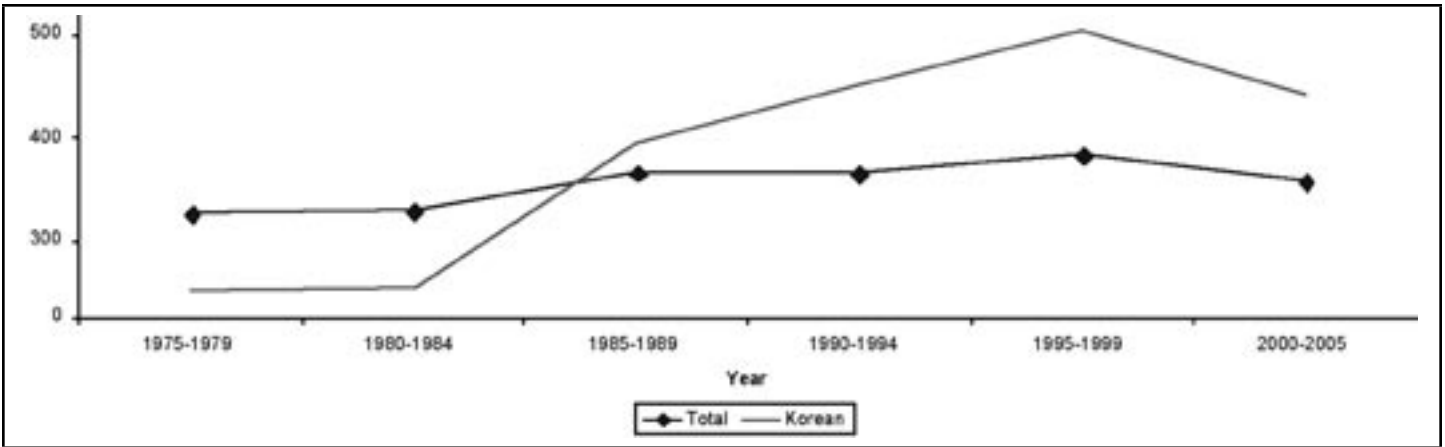


Figure 1.— Overall Cancer Incidence Rates for Hawai'i, Women Age-Adjusted to the US 2000 Standard Population

Note: The total number of cases ranged from 5339 to 15069 and Korean cases ranged from 91 to 382, per time period.

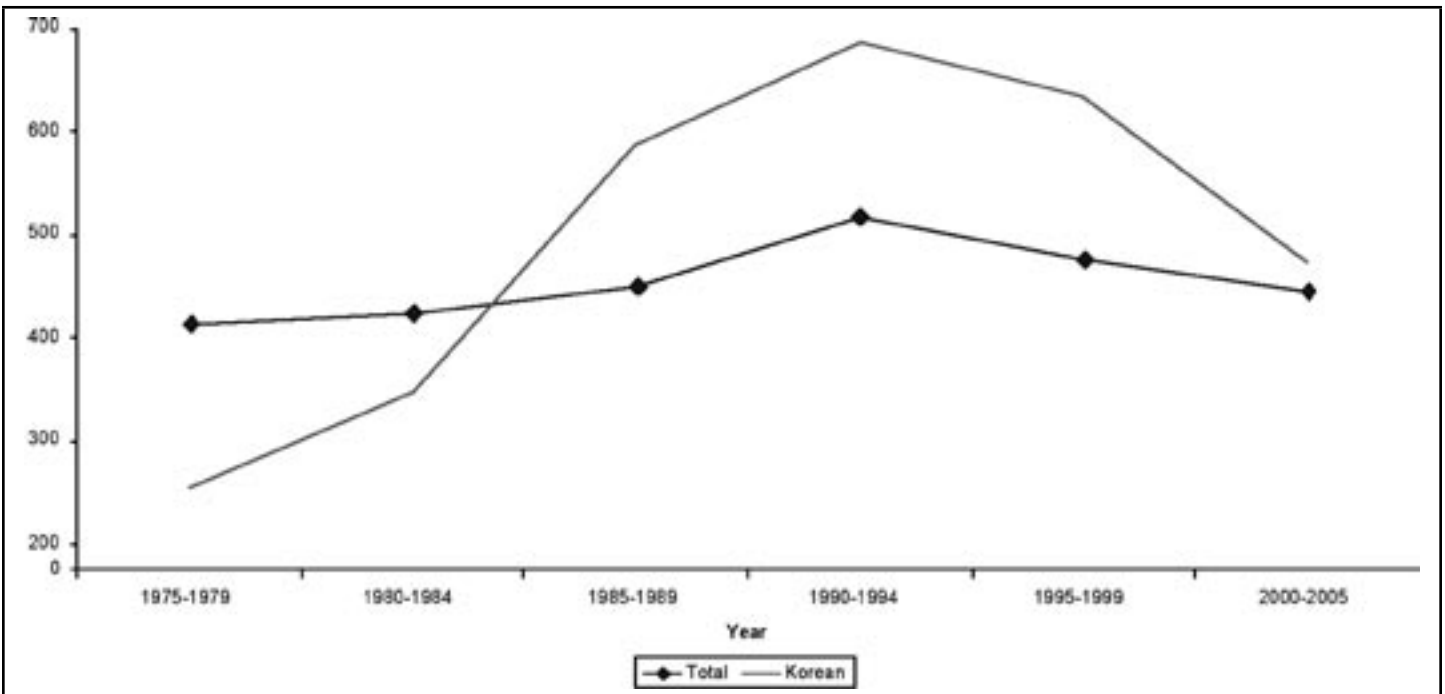


Figure 2.— Overall Cancer Incidence Rates for Hawaii, Men Age-Adjusted to the US 2000 Standard Population

Note: The total number of cases ranged from 6175 to 16367 and Korean cases ranged from 71 to 290, per time period.

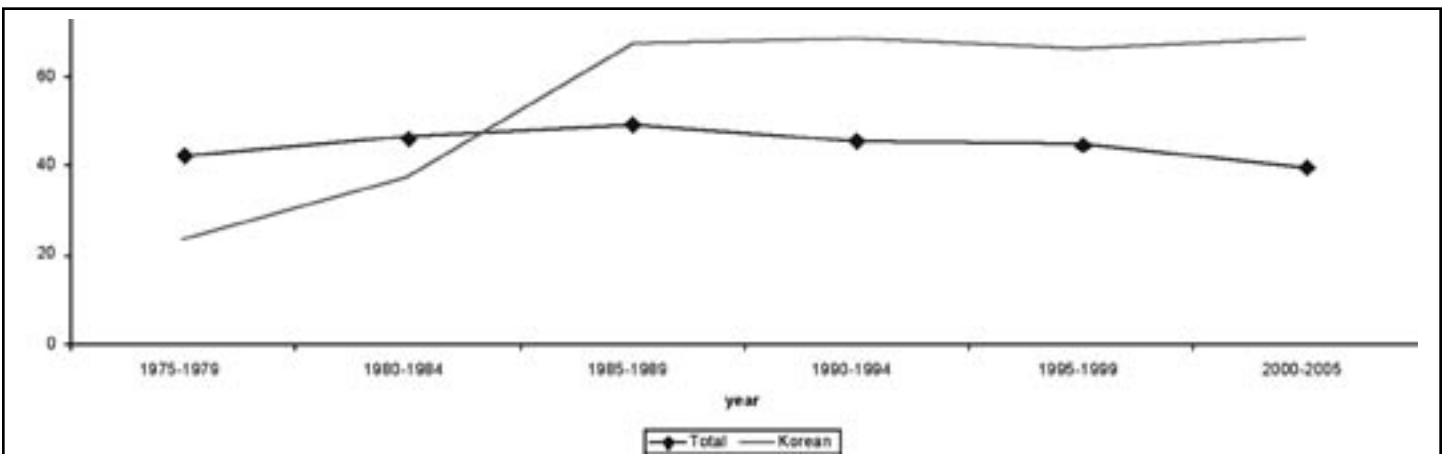


Figure 3.— Colorectal Cancer Incidence for Hawai'i, Women Age-Adjusted to the US 2000 Standard Population

Note: The total number of cases ranged from 629 to 1736 and Korean cases ranged from 8 to 57, per time period.

in 2000-2005 (Figure 5). Lung cancer incidence among Korean men peaked in 1990-1994, where the rate was twice that of the state, but has declined substantially and is now consistent with the state total for 2000-2005 (Figure 6).

Stomach cancer in Hawai'i (state total) has shown a steady gradual decrease between 1975 and 2005. Korean rates for both sexes have also been declining since 1985, although they are 2-3 fold higher than Hawai'i state rates (Figures 7 & 8). Korean stomach cancer rates are the highest among the major ethnic groups of Hawai'i, with the next highest rates among Japanese at 30 and 12 per 100,000 respectively for men and women. Liver cancer rates peaked for Koreans in 1990, and have decreased since then (Figures 9 & 10). However, the Korean rates for both sexes remain 3-fold higher than the state total (Table 2) and are the highest among the major ethnic groups, with the next highest rate among Chinese at 17 and 7 per 100,000 respectively for men and women.

Discussion

Koreans living in Hawai'i appear to be a population in transition, where they still have elevated risks for cancers high in their country of origin, as well as for cancers that are indicative of a western lifestyle. Hawai'i Koreans have an increased risk for stomach and liver cancers compared to other ethnic groups in Hawai'i. For women, there are

also elevations in colorectal and lung cancer incidence compared to the state total and other ethnic groups. Compared to cancer rates in Korea, the incidence of breast, prostate, and colorectal cancer were higher in Koreans living in Hawai'i by 58% or more.¹¹ These differences may also be due, in part, to differences in screening practices. Stomach and liver cancer rates for men were substantially higher in Korea compared to Koreans living in Hawai'i, but not markedly different for women. Korean women in Hawai'i had a substantially higher rate of lung cancer than those living in Korea whereas males in Korea had greater lung cancer rates than those in Hawai'i.

The comparisons and trends discussed are considered descriptive and are based on a relatively small number of cancer cases for Koreans living in Hawai'i. While the population of Koreans in Hawai'i may be heterogeneous with regard to immigrant/ generation status and acculturation, their combination of exposures suggests they are an important group to encourage screening for early detection of colorectal cancer and to discuss smoking behavior and cessation, particularly for women.

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

Acknowledgement

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Site	Men		Women	
	State Total	Koreans	State Total	Koreans
all	446.0	474.6	358.4	442.9
Prostate/Breast	124.3	92.9	120.2	113.9
Colorectal	60.1	69.8	39.8	68.5
Lung	63.4	63.0	36.0	52.6
Stomach	16.9	41.6	8.9	32.6
Liver	12.5	36.5	5.3	19.1

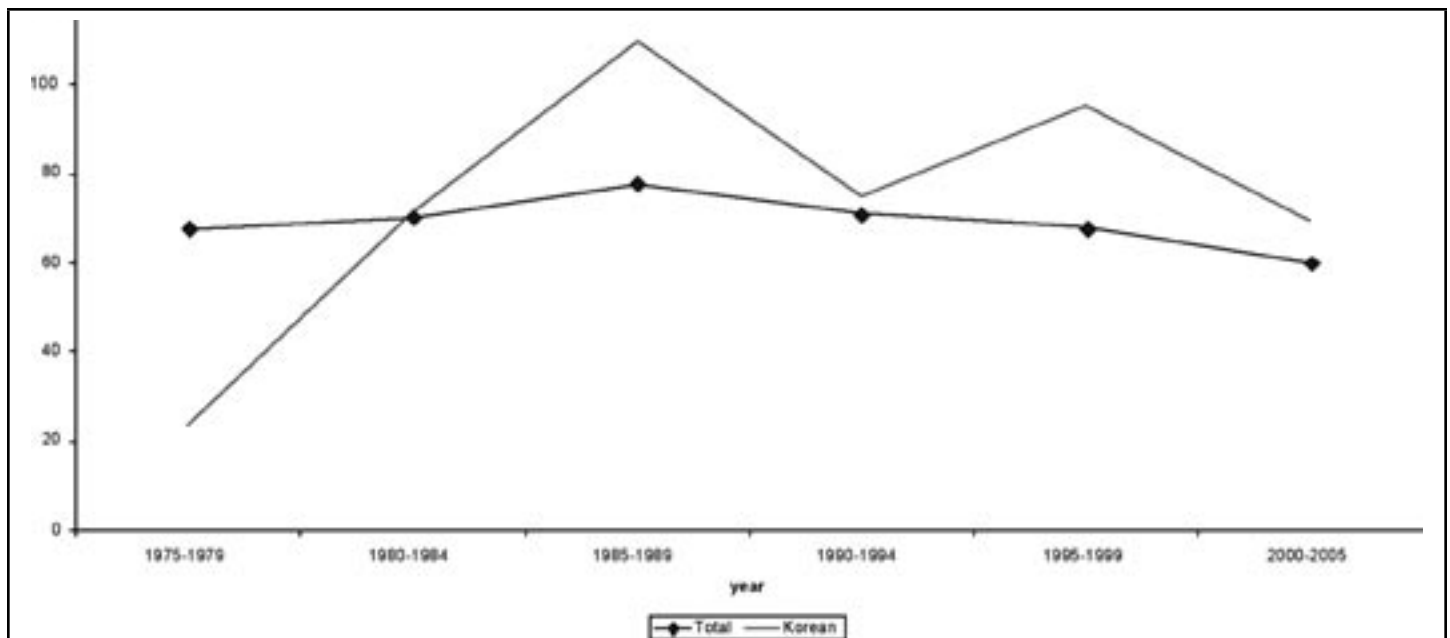


Figure 4.— Colorectal Cancer Incidence for Hawai'i, Men Age-Adjusted to the US 2000 Standard Population

Note: The total number of cases ranged from 1016 to 2205 and Korean cases ranged from 7 to 42, per time period.

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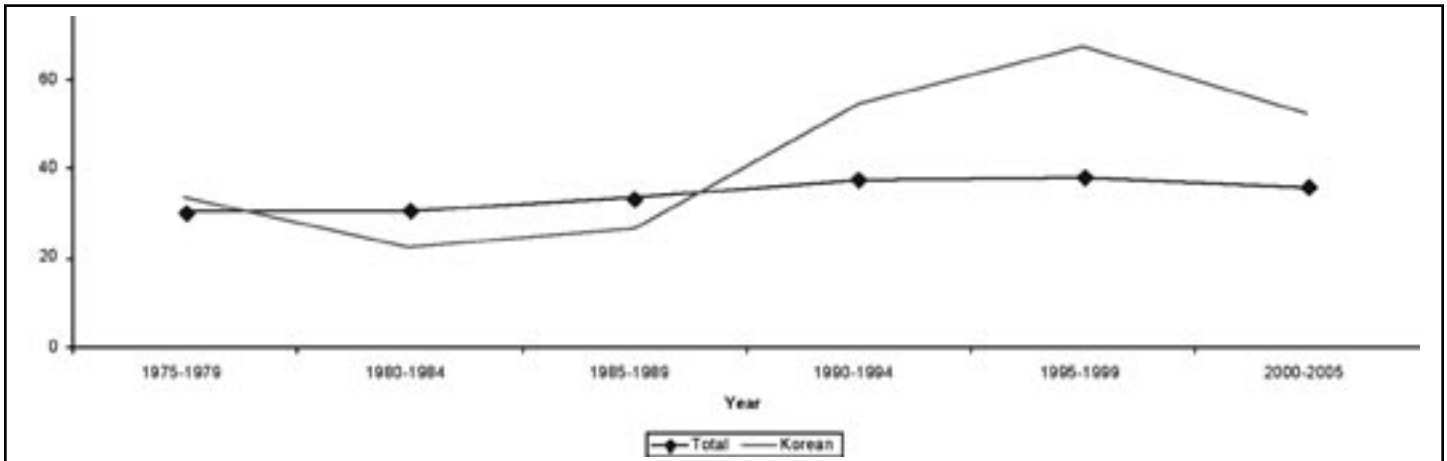


Figure 5.— Lung Cancer Incidence for Hawai'i, Women Age-Adjusted to the US 2000 Standard Population

Note: The total number of cases ranged from 485 to 1569 and Korean cases ranged from 10 to 46, per time period.

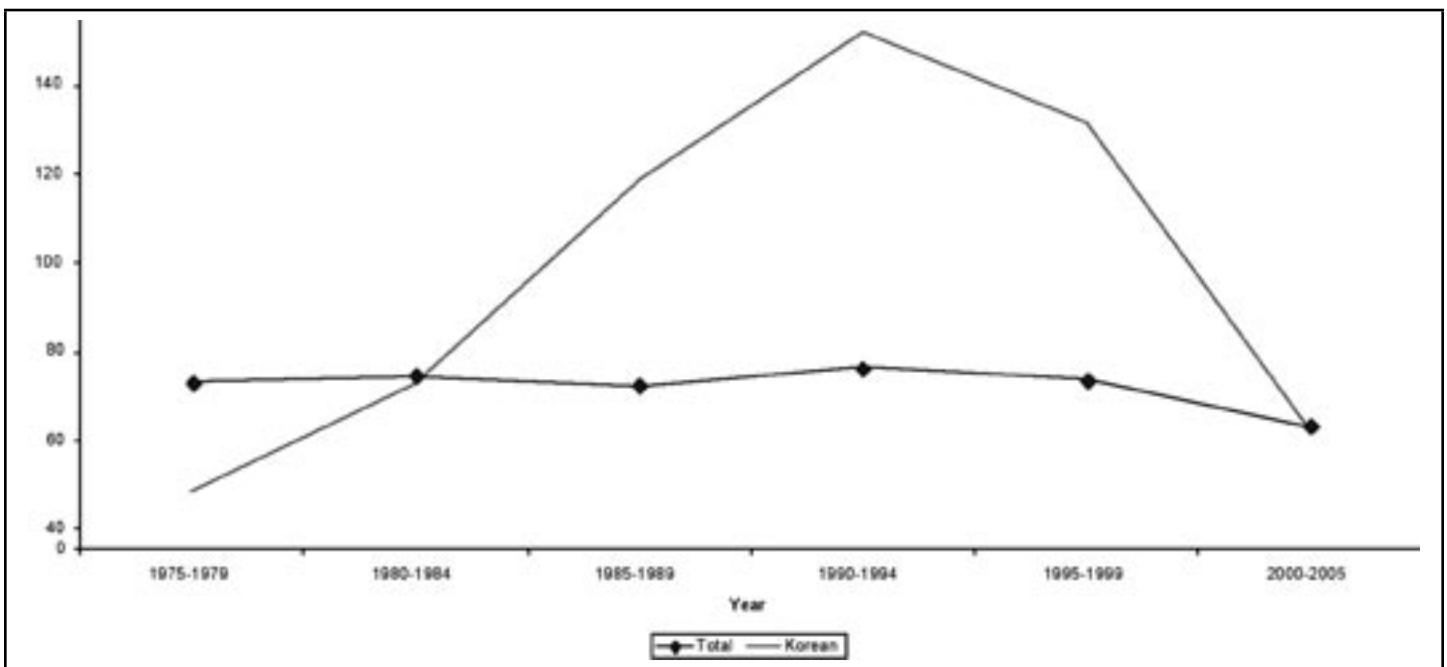


Figure 6.— Lung Cancer Incidence for Hawai'i, Men Age-Adjusted to the US 2000 Standard Population

Note: The total number of cases ranged from 1117 to 2324 and Korean cases ranged from 14 to 47, per time period.

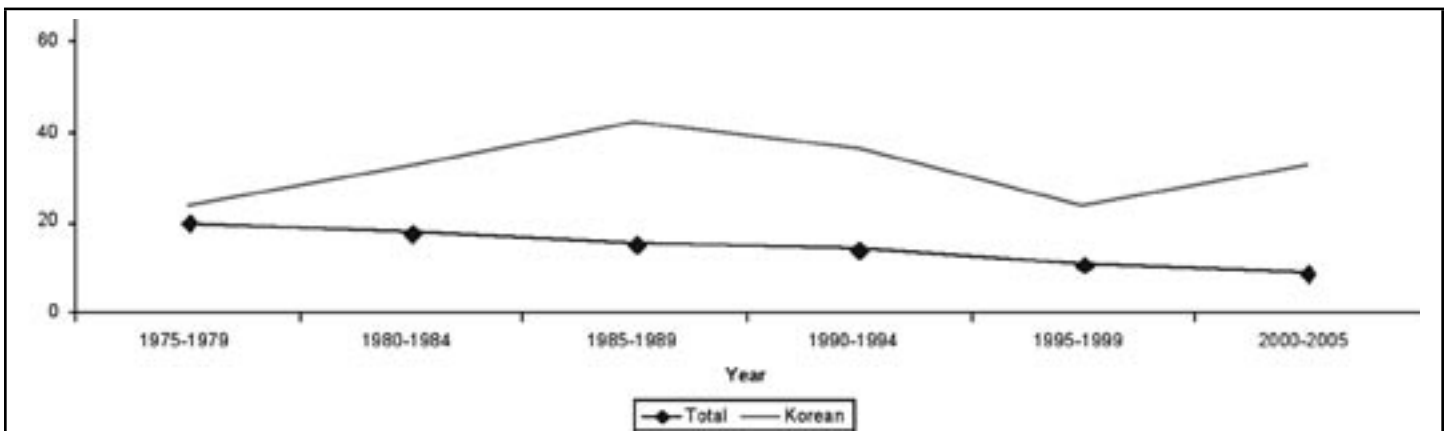


Figure 7.— Stomach Cancer Incidence for Hawai'i, Women Age-Adjusted to the US 2000 Standard Population

Note: The total number of cases ranged from 282 to 398 and Korean cases ranged from 8 to 26, per time period.

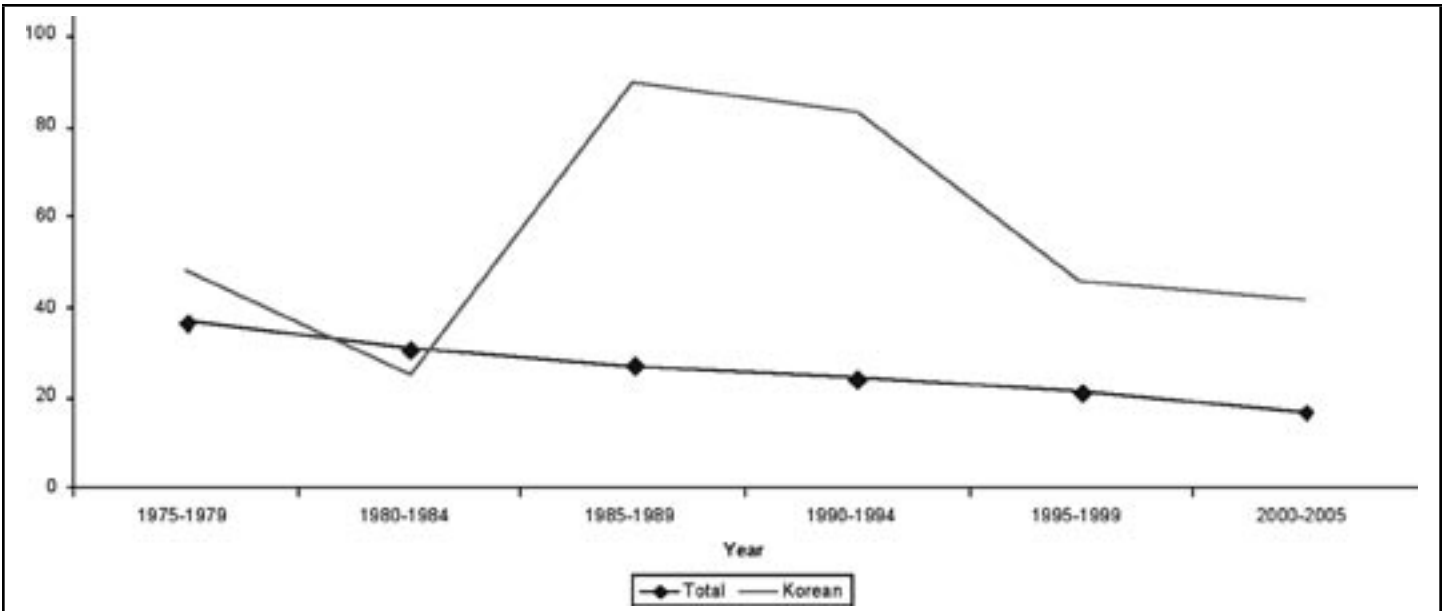


Figure 8.— Stomach Cancer Incidence for Hawai'i, Men Age-Adjusted to the US 2000 Standard Population

Note: The total number of cases ranged from 493 to 608 and Korean cases ranged from 11 to 26, per time period.

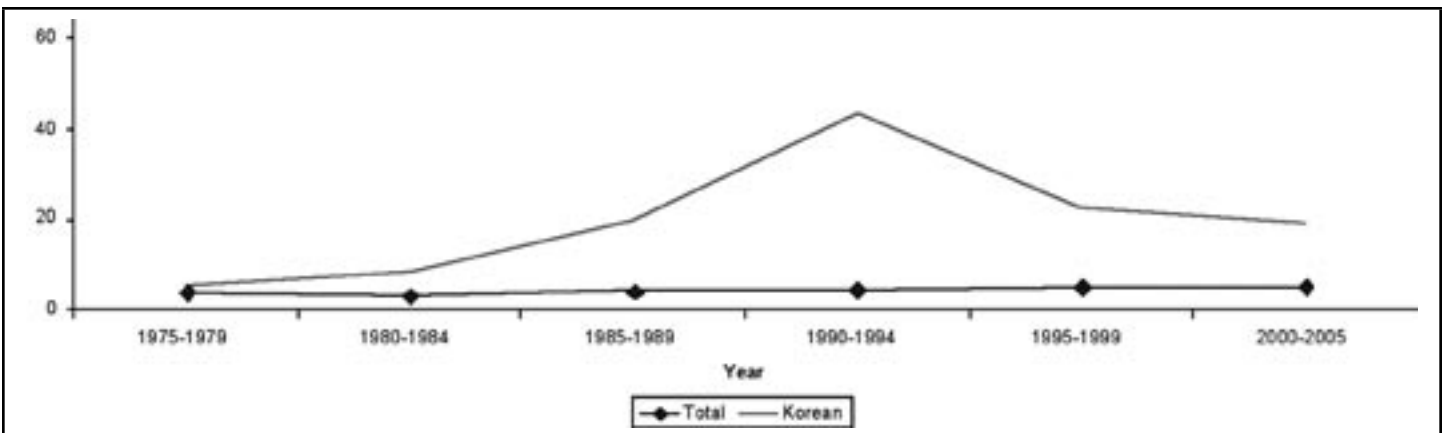


Figure 9.— Liver Cancer Incidence for Hawai'i, Women Age-Adjusted to the US 2000 Standard Population

Note: The total number of cases ranged from 55 to 230 and Korean cases ranged from 2 to 20, per time period.

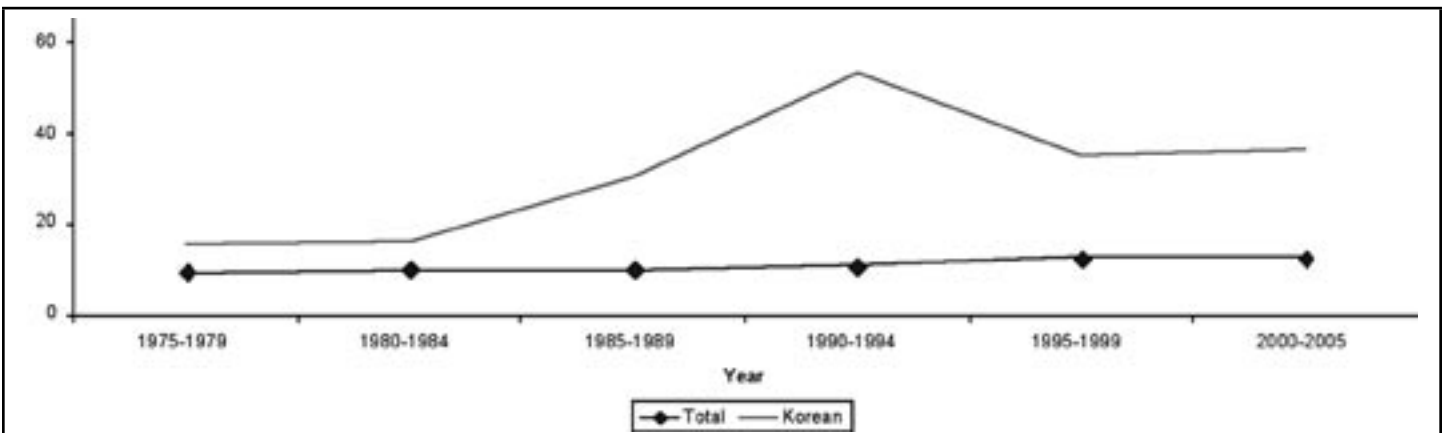


Figure 10.— Liver Cancer Incidence for Hawai'i, Men Age-Adjusted to the US 2000 Standard Population

Note: The total number of cases ranged from 144 to 467 and Korean cases ranged from 5 to 21, per time period.



Issues in Medical Malpractice XXVIII

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

Question: You operate a for-profit medical web site that displays the latest in diagnosis and treatment. You also answer personal medical questions from subscribing viewers. There is a disclaimer that you are not providing medical advice, and viewers are to consult their personal physicians. A viewer, in reliance on your information, suffers harm. Which of the following (one or more) is/are correct?

- A. No doctor-patient relationship is formed in cyberspace, so there is no need to worry about legal duty of due care.
- B. The disclaimer effectively immunizes you against a lawsuit.
- C. Negligence claims may be more likely to prevail against for-profit than not-for-profit educational web sites.
- D. You may be liable for breach of privacy or confidentiality.
- E. Answering your patient's questions via e-mail is like a phone consultation, except that everything is documented.

Answer: C, D and E are correct. Huge benefits notwithstanding, one must remain cognizant of the risks surrounding the use of information technology in clinical medicine. Depending on the facts, a court may find that a doctor-patient relationship has indeed been formed in cyberspace. Factors may include knowledge of names of subscribers, frequency of interactions, specificity of queries, and so on. In particular, a subscription fee is likely to be construed as evidence of soliciting and accepting a more committed interaction, so it places the operator of the web site at greater legal risk. Other than negligence, a viewer may also claim breach of confidentiality or privacy. E-mail not uncommonly ends up in the wrong mailboxes, and risks exposing sensitive medical information to strangers. Because e-mails preserve a record of what was asked, said, or recommended, they constitute powerful evidence supporting — or damning — the doctor. Finally, although a specific disclaimer is a prudent and standard precaution, it is not always enough to protect against a lawsuit. Litigants will argue that a disclaimer is cautionary advice at best, not a legal instrument that can be used to extinguish a litigant's rights.

Medico-Legal Risks of Online Communication

With respect to the internet, medico-legal risks fall into three main areas: breach of privacy and confidentiality, medical negligence, and lack of informed consent. In addition, there may also be issues of products liability, cross-border jurisdictional litigation, as well as other liabilities.

Privacy & Confidentiality: The awesome potential of the internet to offer large-scale shared electronic databases properly raises ethical and legal issues of privacy and confidentiality and rights of access. The whole world can now literally peek at the patient's records, unless they are secured. Reliable protocols are therefore critical to electronically identify patients and providers, secure permission for release of records, and track information that is transmitted.¹

Then there is the issue of the privacy and confidentiality of e-mail and other online messages. These messages are not as private as one would like to believe unless they are encrypted. Doctors who use emails to communicate with or about their patients are obligated to secure these communications. The Health Insurance Portability and Accountability Act (HIPAA) rules impose both civil and criminal liabilities on the healthcare provider who is found in violation of standards governing electronic medical information.

Medical Negligence: Injured parties may allege medical malpractice for online acts or omissions. Substandard conduct may include, among other things, wrong advice, untimely diagnoses and referrals, treatment errors including prescription errors, and failure to return calls or respond to electronic messages including e-mails.

Although not the typical office or hospital patient, a plaintiff may argue successfully that a professional doctor-patient relationship had nonetheless been formed. In analogous situations, courts have sometimes ruled in favor of plaintiffs despite the absence of face-to-face interaction with a physician. In one case, a doctor speaking to a patient from the emergency department was deemed to have formed such a relationship,² and in another, an on-call neurologist's telephone advice to the treating doctor likewise raised the issue of legal duty.³ On the other hand, an informal opinion from a consultant to a primary care doctor did not give rise to a relationship between consultant and patient even though the primary care doctor recorded the information in the medical record.⁴

Informed Consent: The most likely "medical treatment" on the internet involves getting medical advice or prescriptions, and one may assume, incorrectly, that the patient has already provided consent by voluntarily viewing or subscribing to the web site. However, one has to be confident that the patient understands what is being proffered including the alternatives and material risks. And is the consent informed and uncoerced? Doctors who wish to conduct business on the internet should consult legal counsel before opening their web site. Claims asserting lack of informed consent are a part of virtually every malpractice lawsuit and cyber-consent may yet emerge as a minefield.

Medem, Inc., a national coalition of medical societies covering the majority of physicians, has published an excellent overview of the subject in a document entitled "*eRisk for Providers: Understanding and Mitigating Provider Risk Associated with Online Patient Interaction.*"⁵ The document is the product of Medem's eRisk Working Group for Healthcare, which received input from malpractice carriers, medical societies, and legal counsel. It lists the following four areas of internet risk to providers: 1) Liability for online malpractice; 2) Liability associated with the expansion of the physician's office and the patient physician relationship onto the internet; 3) Liability associated with the inadvertent creation of a physician-patient relationship or other licensed provider-patient

relationship; and 4) Liability for failures of process and/or supporting technology resulting in misuse, inappropriate disclosure, loss, or inappropriate access to patient information (including issues of HIPAA and other regulatory compliance).

In a recent update, the eRisk working group issued ten guidelines for online communications, emphasizing issues such as authentication and access, sensitive subject matter, emergency medical advice, and links to third party web sites.⁶

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.

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October 2008					
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 Web: wristcourse.org/maui08home.html
November 2008					
11/11	Multi	Queen's Medical Center	The Queen's Medical Center Conference Center	QMC Conference on Pain & Symptom Management	Tel: (808) 537-7009 Web: www.queens.org/cme.html
11/14	Multi	Pu'ulu Lapa'au Hawai'i Physicians Health Program	The Queen's Medical Center Conference Center	2nd Annual Disruptive Physician Conference	Tel: (808) 585-8160
11/15	Multi	Access Care Today	Queen's Conference Center	Hepatitis – Practical Clinical Concepts	Tel: (808) 373-3488 Email: alantice@idlinks.com Web: www.idlinks.com
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
1/26-1/27	Multi	Kaiser Permanente	Honolulu, HI	7th Annual Pain Management Symposium	Tel: (808) 432-5704
1/28-1/31	PMD	American Academy of Pain Medicine	Hilton Hawaiian Village, Honolulu	Annual & Scientific Meeting	Web: www.painmed.org
February 2009					
2/27-3/1	Multi	Hawai'i Academy of Family Physicians	Hilton Waikiki Prince Kuhio Hotel, Honolulu, O'ahu	Hawai'i Update: Celebrating Diversity in Our Community and Our Specialty	Tel: (808) 864-9812 Web: www.hafp.com
March 2009					
3/5-3/8	PYG	American Association for Geriatric Psychiatry	Hawai'i Convention Center, Honolulu	AAGP 22nd Annual Meeting	Web: www.aagponline.org
3/15-3/20	GE, R, U	Society of Gastrointestinal Radiologists, Society of Uroradiologists	Grand Wailea Resort, Wailea, Maui	2009 Abdominal Radiology Course	Web: www.sqr.org

Classified Notices For more information call (808) 536-7702, Ext. 101, or go online: www.hmaonline.net.

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Russell T. Stodd MD

❖ SOMETIMES WE DESPERATELY NEED AN ESCAPE KEY.

In St. Louis, Missouri, a 69-year-old man was admitted to St. Anthony's Medical Center for heart disease and had a pacemaker implanted by a cardiac surgeon. He developed a post-op infection with methicillin-resistant staphylococcus aureus (MRSA). He survived after 15 additional surgeries, but lost his right leg, part of his left foot, a kidney, and most of his hearing. His lawsuit against the surgeon and the medical center resulted in a jury award of \$2.5 million. The basis of the winning claim was that doctors and staff did not clean their hands and rigorously practice proper hygiene and other prophylactic

measures. Previously nearly all hospital acquired infections were considered an unavoidable risk, but that is no longer acceptable. This is a new legal environment. Medicare is preparing a list of "never events" including bloodstream infections, urinary tract infections, and surgical infections following device related orthopedic or cardiac operations. Beginning in October, Medicare will cease reimbursing hospitals for treatment of these and 27 other "never events."

❖ IT ISN'T HOMEWORK UNLESS IT'S DUE TOMORROW.

Related to the above story, Atul Gawande MD is a Boston surgeon with remarkable literary skills. He has written two books that are easily understood by any reader, but are addressed primarily to health care and medical practice. One is called *Complications* and the other is *Better*. These books should be required reading for all physicians. One of his recommendations is that doctors and hospitals can easily devise a checklist for operations and procedures such as airline pilots must use prior to leaving the gate and again before taking off. Johns Hopkins Medical Center in Baltimore and Sutter Roseville Medical Center in Sacramento have reached the goal of zero central bloodstream infections. Why would a jury of laymen not find in favor of the plaintiff when presented with such information. Checklists can be simple but comprehensive and serve to protect the surgeon, the medical facility, and especially the patient.

❖ DON'T PHONE AND DRIVE! THE LIFE YOU SAVE MAY BE YOUR OWN.

The question of should Hawai'i require drivers to use a hands-free set-up with their cell phones resulted in 79% of respondents saying yes (*Pacific Business News*). Electronic gadgetry has the driver taking his hands off the steering wheel for texting, fiddling with the iPhone, adjusting a BlackBerry, leaning to watch a video, but the greatest honor goes to the cell phone. California has joined five other states in banning the use of handheld cell phones and requires that all motorists who want to chatter while driving must have a hands-free device. The drunks on the road usually come out at night when the roads are less traveled and they are an abiding threat, but at least they are not cruising down Kalaniana'ole Highway at 30 mph steering with the knees at 8:00 A.M. while texting a lover.

❖ PONZI WENT TO JAIL, BUT CONGRESS WENT ON RECESS.

One hundred twenty years ago the Chancellor of Germany, Otto von Bismarck, pushed into law a social security program for the elderly that provided income for citizens age 70 and beyond. Twenty-seven years later in 1916 the age was lowered to 65. In 1935 President Roosevelt pushed through a law named Social Security to provide minimum income for Americans age 65 and over to mirror the German law, and in 1983 the beginning age was moved to 67. Actuaries tell us today that there will be major disruptions in the Social Security system unless officials raise the retirement age now. Politicians are afraid to tackle the issue; Barack Obama has pledged that he would not raise the retirement age while John McCain has so far side-stepped the matter. What's the big deal? Bismarck was age 74 when the German law was passed and McCain will never see 70 again. As any actuary will tell you, American Social Security is essentially a Ponzi scheme and can only prosper if the elderly die off more rapidly than new workers come on. This is hardly likely when life expectancy for Americans reached 78.1 years in 2006, and baby boomers are coming on like a tsunami.

❖ BIG BROTHER IS WATCHING YOUR MEDICINE CABINET.

Chances are that few people have ever heard of *Ingenix* and *Milliman Intel-liscript*, but these rival mid-west electronic companies possibly know about you. They create drug profiles by gathering data from prescription drug histories kept by pharmacy benefit managers which help insurers process drug claims. Insurance companies can use the data to determine whether

they want to insure an applicant using a "pharmacy risk score." Company officials stress that they only provide information with the patient's consent (HIPAA compliant) but applicants for coverage must sign consent forms if they expect to get insurance. A spokesman for the American Civil Liberties Union (ACLU) claims that these companies are actually marketing insurance applicants as a commodity. "We've got to stop these practices before the marketplace is fully developed and patients lose all control over their medical information." I think it's too late already.

❖ WELCOME TO MY SWIMMING ROOM.

Michael Phelps is an unbelievable swimming phenomenon, but now the aquatic Olympics are history. A new race is on to transform this magnificent athlete into a marketing tool. Unlike Michael Jordan or Tiger Woods, Phelps' window of fame is limited so the ad people have to move quickly. Book and movie deals are already on the table, a dog food company wants to capitalize on his affection for his bulldog Herman, commemorative coins, bobble-head dolls, acrylic paintings, and free dental work are offered, not to mention that female celebrities, personalities and even athletes want an introduction. Offers are coming in at 40 to 50 per day. Should he renew his contract with Speedo, or wait to hear from Nike where his marketing value is estimated to be worth \$40 million to \$50 million? And what about the other swimmers who contributed to the Phelps relay records, medals and titles? They get a gold medallion to hang in the den. C'est la vie.

❖ OH FATHER, WHERE ART THOU? (BECTON DICKINSON?)

In California, the Supreme Court ruled that doctors cannot refuse to provide care for gays and lesbians based the doctor's religious belief. Two Christian fertility doctors refused to artificially inseminate a lesbian stating that their religious belief provided an exemption from the state law which prohibits discrimination due to sexual-orientation. A 36-year-old woman brought her lawsuit stating that the doctors treated her with fertility drugs and instructed her on how to inseminate herself at home, but would assist her no further. She won in trial court, lost in appeals court, and then won in Supreme Court by unanimous decision.

❖ EXPERIENCE IS THAT MARVELOUS THING THAT ENABLES YOU TO RECOGNIZE A MISTAKE WHEN YOU MAKE IT AGAIN.

In 2004 Congress imposed a Renewable Fuel Standard (RFS) mandate that forced the gasoline industry to mix massive amounts of corn-based ethanol into the nation's fuel supply. In 2007, Congress doubled that mandate to require nine billion gallons of ethanol be mixed into gasoline in 2008. This thoughtless mandate has pushed corn into gasoline and away from grocery stores with the result that the price of corn is spiraling out of control. In 2004, the price of corn was \$2 per bushel. Now it is close to \$8. Rick Perry, Governor of Texas, noted that the cost of staple food items is rising at the food store and the price of corn based feed has devastated the livestock industry. Cattle feeders have been operating in the red since 2007. Governor Perry asked the Environmental Protection Agency (EPA) to cut the grain-based mandate in half for one year. After some delay the EPA refused stating, "The agency's agriculture and energy economists said the mandates are not causing sufficient damage to warrant action." The cost of food and gasoline is going up, mileage per gallon is going down, and the corn growers never had it so good.

❖ HE IS A WITTY JUDGE ABOUT HALF OF THE TIME.

In Santa Cruz, California, a woman with a history of violence was in jail for stabbing a man. She asked the judge for a 12-hour pass to attend a funeral, and he granted her request. To no one's surprise, (except perhaps the judge) she did not come back. The man who was stabbed saw her on the street in downtown Santa Cruz and phoned police.

❖ A ROSE BY ANY OTHER NAME WOULD SMELL AS SWEET.

SHAKESPEARE

In California, the San Francisco Presidential Memorial Commission wants to rename the Oceanside Water Pollution Control Plant, the George W. Bush Sewage Plant. A spokesperson said it would provide a "fitting" monument for Dubya's presidential legacy. Actually, the word used was different but it rhymed with "fitting".

ADDENDA

❖ In St. Paul, Minnesota, three teenagers burglarized a recreation center vending machine. They were caught when police followed a trail of Cheetos to a nearby home, where one of them lives.

❖ How many bureaucrats does it take to screw in a light bulb? Two, one to assure us that everything possible is being done while the other screws the light globe into the water faucet.

❖ Photons have mass!? I didn't even know they were Catholic.

❖ May the forces of evil be confused and disoriented on the way to your house.

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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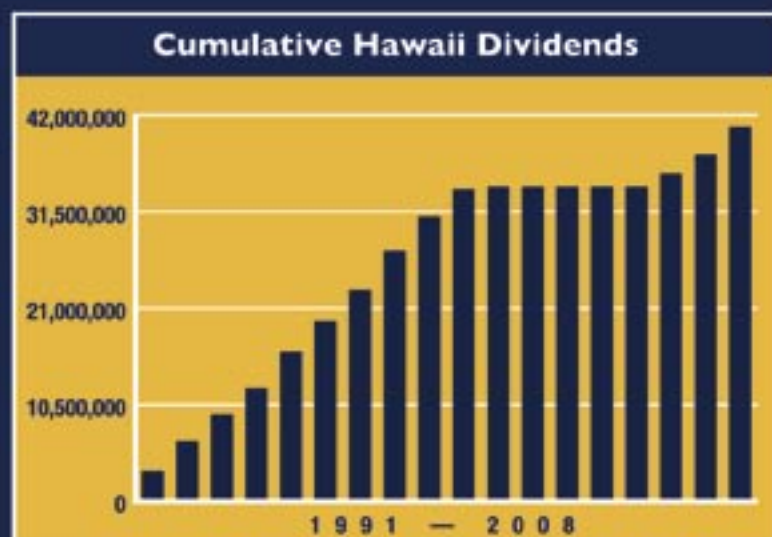


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