

HAWAI'I MEDICAL JOURNAL

A Journal of Asia Pacific Medicine

June 2009, Volume 68, No. 5, ISSN: 0017-8594

HE MANA'O: JUNE 2009

S. Kalani Brady MD, MPH, FACP

100

A PRACTICAL APPROACH TO THE HEALTHCARE CRISIS: THE CURRENT CHALLENGES FACING HAWAI'I AND THE NATION (PART 1 OF 2)

Jerris R. Hedges MD, MS, MMM and Daniel A. Handel MD, MPH

101

IMPROVING LIVING RENAL TRANSPLANT: LESSONS FROM A MULTI-ETHNIC TRANSPLANT PROGRAM

Chan W. Park MD; Whitney M. Limm MD; and Linda L. Wong MD

104

FIRST REPORTED UNITED STATES CASE OF LEGIONELLA PNEUMOPHILA SEROGROUP 1 PNEUMONIA IN A PATIENT RECEIVING ANTI-TUMOR NECROSIS FACTOR- α THERAPY

Sadao Jinno MD; Stephen Pulido MD; and Brian C. Pien MD

109

VIRAL HEPATITIS IN A HOMELESS SHELTER IN HAWAI'I

Daniel E. C. Boyce MS; Alan D. Tice MD; Fernando V. Ona MD; Kenneth T. Akinaka MRA; and Heather Lusk BS

113

MEDICAL SCHOOL HOTLINE

An Evaluation Tool to Measure Cultural Competency in Graduate Medical Education

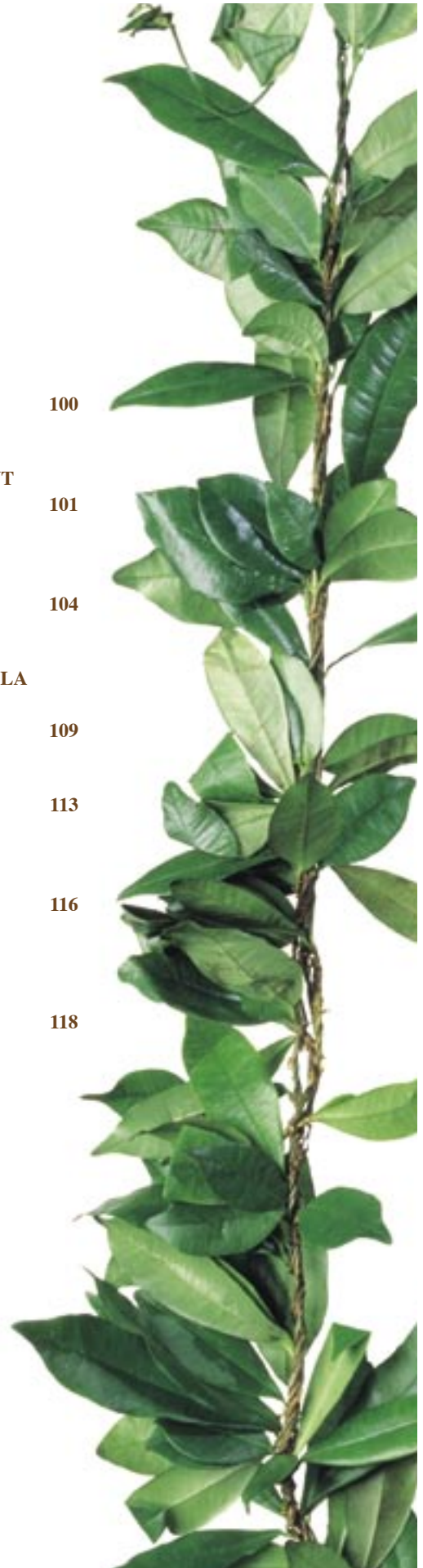
Maria B.J. Chun PhD; John Huh MD; Cynthia Hew MD; and Bradley Chun MD

116

WEATHERVANE

Russell T. Stodd MD

118



"Service is what sets us apart from the crowd."

Underwriter
Maya Campaña



Service and Value

MIEC takes pride in both. For 28 years, MIEC has been steadfast in our protection of Hawaii physicians. With conscientious Underwriting, excellent claims management and hands-on Loss Prevention services, we've partnered with policyholders to keep premiums low. This year, we are pleased to announce a 5% rate reduction.

Added value: At MIEC we have a history of dividend distributions. Because we are a zero-profit carrier with low overhead, MIEC has been able to return dividends to our Hawaii policyholders 15 of the last 19 years with an **average savings on premiums of 23.7%**.

For more information or to apply:

Contact Maya Campaña by phone: **800.227.4527 x3326** email: **mayac@miec.com**. You can also go to www.miec.com or call 800.227.4527, and a helpful receptionist (not an automated phone tree) will connect you to one of our knowledgeable underwriting staff.

* (On premiums at \$1/3 million limits. Future dividends cannot be guaranteed.)

MIEC 6250 Claremont Avenue, Oakland, California 94618
800-227-4527 • www.miec.com HMA_lg.ad_3.26.09

MIEC

Owned by the policyholders we protect.

Register Now!



HMSA's Online Care

... There when you need it.

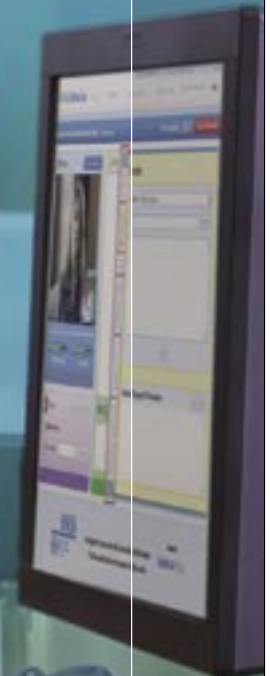


No traffic.
No appointment
necessary.
No hassle.

HMSA's Online Care
connects you with
local physicians
from HMSA's network.

Visits via the Web or
telephone from the comfort
and privacy of your home.

To access
HMSA's Online Care,
visit hmsa.com.



HMSA



Blue Cross
Blue Shield
of Hawaii

An Independent Licensee of the Blue Cross and Blue Shield Association

Working for a Healthier Hawaii

HAWAI'I MEDICAL JOURNAL

Published monthly by University Clinical,
Education & Research Associates (UCERA)

Mail to: Editor, Hawai'i Medical Journal
677 Ala Moana Blvd., Suite 1016B
Honolulu, Hawai'i 96813
Phone: (808) 538-2526; Fax: (808) 537-4272
<http://www.hawaiiomedicaljournal.org>

The Hawai'i Medical Journal was founded
in 1941 by the Hawai'i Medical Association (HMA),
incorporated in 1856 under the Hawaiian monarchy.
In 2009 the journal was transferred by HMA to UCERA.

Editors

Editor: S. Kalani Brady MD
Editor Emeritus: Norman Goldstein MD
Associate Editor: Alan D. Tice MD
Contributing Editors:
Satoru Izutsu PhD
James Ireland MD
Russell T. Stodd MD
S.Y. Tan MD, JD
Carl-Wilhelm Vogel MD, PhD

Editorial Board

Benjamin W. Berg MD, Patricia Lanoie Blanchette MD, MPH
John Breinich MLS, April Donahue,
Satoru Izutsu PhD, Douglas Massey MD,
Alfred D. Morris MD, Gary Okamoto MD,
Myron E. Shirasu MD, Russell T. Stodd MD,
Frank L. Tabrah MD, Carl-Wilhelm Vogel MD, PhD

Journal Staff

Production Manager: Drake Chinen
Editorial Assistant/Subscription Manager: Janessa Ruckle
Copy Editor: Niranda Chantavy Hartle

Advertising Representative

Roth Communications
2040 Alewa Drive
Honolulu, Hawai'i 96817
Phone (808) 595-4124
Fax (808) 595-5087

Full text articles available on PubMed Central and hawaiiomedicaljournal.org

The Journal cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The right is reserved to reject material submitted for editorial or advertising columns. The Hawai'i Medical Journal (ISSN 0017-8594) is published monthly by University Clinical, Education & Research Associates (UCERA). Postmaster: Send address changes to the Hawai'i Medical Journal, 677 Ala Moana Blvd., Suite 1016B, Honolulu, Hawai'i 96813. Print subscriptions are available for an annual fee of \$100. ©Copyright 2009 by University Clinical, Education & Research Associates (UCERA). Printed in the United States.

The Hawai'i Medical Journal is a monthly, peer-reviewed journal published by UCERA.

The Journal's aim is to provide new, scientific information in a scholarly manner, with a focus on the unique, multicultural and environmental aspects of the Hawaiian Islands and Pacific Rim region.



Our goal is to help your practice succeed.
Come and find out how we do it.

Preferred Rates
Preferred Terms
Flexible Repayments

WHERE *your* BUSINESS COMES FIRST



HAWAII NATIONAL BANK

CALL (808) 528-7711
OR VISIT www.HAWAII NATIONAL.COM

Member FDIC Federal Reserve System Equal Opportunity Lender

www.hawaiiomedicaljournal.org

Subscribe to the HMJ online.



He Mana'ō: June 2009

S. Kalani Brady MD, MPH, FACP; Editor, Hawai'i Medical Journal

I wish to commend to you an icon. He is a man responsible for so many of us kauka (doctors) who have been inspired, guided, taught, nurtured; a man who balanced personal mentoring with societal change, with a return to recognition of our mana (spiritual energy), our kuleana (responsibility).

Dr. Kekuni Blaisdell was the John A. Burns School of Medicine's first Chair of the Department of Medicine, well chosen for his excellence in the practice of Western medicine. He is also kupuna (senior advisor) in the University of Hawai'i School of Medicine Department of Native Hawaiian Health, the first department created to study an aboriginal/first nation population of any medical school in the United States.

Kekuni was born in 1925 to Nameleonalani Piltz and James Keli'ikauahi Akana, both bookkeepers. When he was 7, his father passed on, and his mother later married William Kaha'i Blaisdell, who hanai (adopted) him and his older sister.

When at Kamehameha Schools, he was told he should be an electrician, because trades were emphasized at that time: how could a kanaka (Hawaiian) become a physician? In fact he was told by a ha'ole (non-Hawaiian) teacher that a few little dots in the Pacific at the side of the world map were the insignificant Hawai'i: much different than our understanding of ka pae'aina (our homeland) in the center of ka moana nui (the great ocean, Pacific). He remembers that at the time, "kanaka" was a derisive term rather than the definition of human being.

Kekuni graduated from Kamehameha, and went to the church-sponsored University of Redlands in California. This very conservative campus atmosphere supported Kekuni's desire to study, offering little in the way of extracurricular distractions. He then attended the prestigious University of Chicago for medical school, and after completing his internship, he served in the US Army, including assignments in Korea, Japan, and Taiwan, where he helped set up his base's first pathology lab.

Kekuni mastered every layer of health with a passion. As we know, in medicine, there are several perspectives. The microbiologist focuses on the world under a microscope. As a doctor in Taiwan and later Chief of Hematology for the US Atomic Bomb Casualty Commission, he spent much time in the microcosm of cells.

While in Japan, he adopted his hanai son, Mitsunori Kamakanaka'ilialoha, an orphan. In 1962, Kekuni married Irene Hiroko Saito, and then returned to the University of Chicago, where their daughter Helen Kaleleonalani was born. After six years on faculty in Chicago, he was recruited to return to our fledgling John A. Burns School of Medicine as chair of the largest and most important field, the Department of Medicine. He helped establish clinical training programs in Saipan, Palau, Chuuk, Pohnpei, and Okinawa.

As a doctor who finds my own greatest reward in clinical medicine, I have marveled at Kekuni in the doctor/patient relationship. Unlike many who bow to the constraints of time and the encroaching of technology on the patient visit, Kekuni sat and listened to the patient. He once said he chose academic medicine because it allowed the time to care for patients the way he envisioned his calling. In teaching his students, he espoused five principles:


- 1) the patient comes first.
- 2) bring science to the bedside.
- 3) doctor means teacher.
- 4) have fun at what you're doing.
- 5) ka pae'aina is a very special place.

Countless former haumana (students) use this mantra in their present practice of medicine.

Many kauka would stop here, feeling that they had given enough to the calling of medicine: not Kekuni. He ascended up the perspective again from cellular and microscopic medicine to clinical medicine one-on-one with patients to a population perspective, and finally to an understanding of health in the context of our Hawaiian culture. Rather than simply focus on health disparities in Native Hawaiians from the perspective of education, socio-economic status, and cultural differences leading to non-compliance with the Western medical system, a common Western public health perspective, he delved deeper into the root causes of poor health in many of our kanaka maoli (native Hawaiians).

As a founder of E Ola Mau, an organization of kanaka maoli healers, he provided some of the key early reports on the health of Native Hawaiians, including the US Congressional Native Hawaiians Study Commission Report and the 1985 E Ola Mau Native Hawaiian Health Needs Study Report. These reports had a pivotal impact on governmental recognition of the state of kanaka maoli health, and still provide the foundation for further research in this field. These reports led to the creation of the 1988 Native Hawaiian Healthcare Improvement Act, and Papa Ola Lokahi, the Native Hawaiian Healthcare System, which provides research, education, and clinical healthcare on many of our Hawaiian islands. The reports also helped support the creation of the Native Hawaiian Health Scholarship Program to increase the number of Native Hawaiian health professionals. Kekuni is also a charter member of the 'Ahahui o Na Kauka, the Native Hawaiian physicians organization, and a permanent kupuna member of its Board.

While he might be considered the penultimate internist, he has a deep knowledge of the healing practices of our culture. He describes a totally different paradigm from Western medicine. He says that the essence of wellness is lokahi (oneness) and pono (harmony) with self, others, and all in the cosmos. Lokahi is inherent, having resulted from the mating of the sky father Wakea with the earth mother Papa. Since all things have this common heritage, all things are living, conscious, and communicating siblings. Pono is maintained by proper thoughts, feelings, and actions toward the spiritual as well as the material world. Kekuni says that unfortunate outcomes such as ma'i, or illness, result from altered pono or impaired relationships and loss of mana (spiritual energy). Wellness is primarily restored by correcting impaired relationships through communication, with supplemental la'au, lomilomi, and other modalities used as appropriate to bring about healing.

With his calm, gentle, but assertive manor, Kekuni Blaisdell reminds us all of our cultural heritage and compels us to "imua e na poki'i." 

A Practical Approach to the Healthcare Crisis: The Current Challenges Facing Hawai'i and the Nation (Part 1 of 2)

Jerris R. Hedges MD, MS, MMM and Daniel A. Handel MD, MPH

Abstract

Although there is consensus regarding the existence of a healthcare crisis, that point is where the consensus stops, even within defined professional and demographic groups. Clearly there is evidence that we must address a growing societal expenditure for healthcare, an aging and more complex patient population, a shortage of physicians and other health care providers, and health outcomes disparities amongst population groups. This article emphasizes how these factors impact healthcare nationally and in Hawai'i. The second part of this series outlines approaches that can enhance health in the United States without creating economic collapse.

Introduction

Among physicians, nurses, hospital administrators, healthcare insurers, politicians, business leaders, and the family with children or elders, there is consensus regarding the existence of a healthcare crisis. That point is probably where the consensus stops, even within defined professional and demographic groups. Clearly, experience and self-interest color of all our perspectives. There are approaches that can enhance health in the United States without creating economic collapse, but these approaches require societal changes. To produce a better product, there must be state and federal investment into a systems approach that enhances patient access to health promotion and maintenance coupled with a refocusing of reimbursement; societal acceptance of the limits to medical care available within such a system; use of a no-fault injured patient/family compensation fund; and societal investment in the training of our future practitioners. To better understand the rationale for these approaches, this article, as the first of a two-part series, explores the current problems facing the US healthcare system, both in Hawai'i and in the nation. In the second part, we will address specific approaches to these healthcare issues.

The Problems

Others have elegantly outlined the problems facing the United States in health care and in achieving health targets.^{1,2} Indeed, it is the challenge of achieving our health targets that should be our collective focus as health care implies the application of resources to maintain or achieve health. Key challenges that the United States faces include the following:

1) The expenditure of large portions of the United States gross domestic product with a disproportionate achievement of health targets: Nationwide, the United States invests 16% of the GDP or \$2.3 trillion.³ In Hawai'i, 13% of the Gross State Product was devoted to healthcare in 2004, comparable to the national average that year.⁴

2) An aging population with increasingly more complex and demanding healthcare needs: Almost 13% of the United States is expected to be over the age of 65 in 2010 with an increase to 20% by 2050. Comparatively, 14% of Hawaii's population is projected to be 65 years of age and older in 2010, increasing to 22% by 2030.⁵ Those

over 65 years of age consume twice the amount of healthcare services of those under 65.⁶

3) An aging, understaffed, and progressively more disenfranchised healthcare workforce: Even the June 2006 recommendation of the Association of American Medical Colleges (AAMC) of a 30% increase and subsequent further increase in positions in Graduate Medical Education (GME) will only moderate the need as primary care specialties continue to remain short-staffed.⁶

4) Disparities in healthcare access, delivery and outcomes: Such discrepancies have been explored in great detail at a national level both by the Institutes of Medicine (IOM) in their 2002 report, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare*,⁷ and the Agency for Healthcare Research and Quality (AHRQ).⁸

Healthcare Expenditures

The United States is without universal health care and thus systems of healthcare delivery have evolved organically in response to a myriad of financial incentive systems. Despite considerable altruism existing within the healthcare profession, both on the part of physicians, nurses and other direct care providers as well as healthcare administrators, at some point the cost of doing business and the needs of one's own family must be met.

Consequently, in a system that largely reimburses on the basis of documented activity and complexity of service, the performance of technical procedures on the acutely ill patient population is reinforced. Thus the management of chronic disease (e.g., asthma, diabetes, psychiatric illness) is not reinforced and population level health indices are not improved. This phenomenon may occur even if the patient is insured by a provider who reimburses above cost for health maintenance activity, if the reimbursement for acute intervention is greater and the cost of running a practice or hospital remain close to the margin due to a large number of underinsured patients being managed concurrently. In 2007, 18% of the population in the United States under 65 was uninsured, significantly higher than the 8.3% uninsured rate in Hawai'i.³ This figure may be misleading given that many believe that reimbursement for equivalent service even by commercial insurance payers remains lower in Hawai'i than on the US Mainland.

From the consumer's perspective, there is also a disconnect between the cost of health care and what is consumed. Even healthcare insurance is commonly paid by the employer (61.8% in Hawai'i, 53.4% nationwide in 2007).³ Although patients often experience some financial risk through a partial insurance payment and associated per use co-pay, the full cost is often hidden from the employee (but not the employer). Thus, employers may seek to choose relatively healthy employees who will keep their costs down or limit the employee hours to avoid the mandatory insurance requirement. Similarly, insurance companies seek to exclude patients with chronic disease when possible to keep their costs and financial risk low.

These factors mean those who may consume a disproportionate amount of the healthcare dollar and for whom chronic disease management would be most beneficial are less likely to receive such care from physicians and hospitals. These individuals are also at risk of being excluded from employment or insurance coverage. The latter factors result in lack of chronic disease management for much of the population.

The constellation of these factors has led many to call for capitated care models and universal coverage. Given that the only state with a lower uninsured rate than Hawai'i (Massachusetts at 7.9%)⁴ has adopted universal coverage, one might conclude the next natural environment to try such an experiment should be here in Hawai'i. Although attractive as a means to reduce acute care cost, enhance health indices, and improve chronic disease management, these approaches will not succeed unless the other challenges noted above are simultaneously addressed.

Aging Population

Despite health indices being disproportionately lower in the United States than other industrialized nations with a relatively lower expenditure of resources, the life-span of US citizens has increased progressively. The age-adjusted death rate per 100,000 population from 2003-2005 in the United States was 812, decreased from 1022.8 in 1979-1981. Hawai'i had the lowest average of any state in the country at 623.6 per 100,000 during 2003-2005, also down from the 1979-1981 rate of 801.2.⁹ This longevity when coupled with family planning has led to a disproportionate increase in the elderly. Elder US citizens tend to lead active lifestyles unless hampered by advancing or under-treated chronic disease.

One shortfall of healthcare reform that is largely based upon a capitated care model coupled with universal coverage is that even with enhancements in chronic disease management, the burden of chronic disease will continue to increase with the aging population. The vision of a population that will live for a long period in a relatively healthy state and die suddenly with little healthcare intervention has not been borne out.

Elders today require teams of physicians, nurses and other providers to manage multiple conditions, sometimes requiring therapies that may transiently worsen one or more of the conditions. While a "medical home" providing a practitioner care coordinator and shared information systems with consultants and other practitioners will enhance efficiencies and outcomes for these patients, the care demands are considerable.

A key issue to be resolved is the determination of and minimization of futile care – that is, care we are technically able to provide, but that is anticipated to provide little health benefit and that represents significant health risk. In this case, the risk may be not only for the hastening of death or the introduction of morbidity-associated complications, but also the risk of added expense to the patient's family, hospital, physician, and society. A prime example is the expense associated with an extended intensive care unit stay in a patient with end-stage disease whose health status has deteriorated. Two states have demonstrated that on average almost \$30,000 in healthcare is spent in the last year of life.¹⁰ This practice results not only in additional direct expense, but also raises the risk of medical-legal expenses should the patient or family question the care provided or outcomes obtained.

Workforce

The US physician and nursing workforce is aging, understaffed, and progressively disenfranchised. As the US population has increased, the concurrent increase in physicians trained has been at a rate considerably less than the US population growth.⁶ Furthermore, many of the current practitioners are from the "baby-boomer" generation and accepting of long work hours in return for a reasonable financial return. The current millennium practitioners seek more family time and personal reward. Practice choices to a greater extent now reflect decisions to increase family time and financial reward. Consequently more practitioners are choosing practices in densely populated areas associated with specialty activities. As Lawrence Smith MD, FACP stated, Baby Boomers "live to work" and Generation X "works to live."¹¹

The rising costs of business for physicians are in large part due to increasing malpractice liability costs and labor costs in the setting of reduced reimbursement (in terms of inflation adjusted dollars) per unit of care activity provided. Younger physicians are less likely to select a general practice focus or practice in rural settings, in part due to the reduced income potential, but also due to the difficulty in obtaining practice cross-coverage and the desired family time.

In the rural areas, where generalists and specialists are insufficient in number for the population, patients are often without even the possibility of a "medical home" and critical acute care. In 2005, only 11% of physicians practiced nationwide in a rural setting.¹² In these areas, businesses may find it difficult to recruit key personnel as healthcare delivery is marginal. Shortages of providers have been recently documented on the Big Island of Hawai'i, especially for primary care.¹³ Physicians and community leaders are raising the ethical concern that commercial insurers are continuing to accept health insurance premiums when the physical access to healthcare is limited to the local emergency department or a practitioner in a distant town (even if virtually available via computer).

Because the training of medical students is labor intensive and funds for oversight of clinical trainees are limited, especially in rural areas, medical schools have struggled to increase their class size. Federal funding for rural-based training has been reduced and does not address the growing need for key specialists to support the generalists in many communities. Nationally, the AAMC recommendation for a 30% increase in medical students has largely gone unheeded.⁶ In Hawai'i, plans to expand the medical school class at the John A. Burns School of Medicine have been tabled due to the reduction in state higher education funding associated with the current economic recession.

Physicians and other practitioners have been disenfranchised from much of the policy making and funding methods for health care. They have watched as health insurance companies including the state and federal governments have transferred the responsibility for the care of the underinsured to the practitioner as an unfunded mandate. They have watched as hospitals and free-standing facilities war over procedurally based revenue.

Disparities

Ethnic health outcome disparities are well recognized in Hawai'i.^{14,15} Clearly, health outcome disparities may have many causes, including variable access to basic health care; variable access to specific interventions; variations in diet, activity and other cultural and envi-

ronmental factors; and genetic variations. Of these factors, access to basic health care (including preventive measures and chronic disease management) and life-saving interventions are major factors impacting health outcomes. The lack of universal health coverage clearly impacts the ability of patients to access healthcare when needed. The nation has de facto created a safety net for emergency care using the Emergency Treatment & Active Labor Law (EMTALA) to ensure that all patients are provided access to emergency care. EMTALA has virtually no impact on chronic disease management where the opportunity exists to prevent acute disease flares.

The concept of universal health coverage implies that similar services will be provided by all covered by a health plan and not just that all will have a health plan. Much societal discussion and input will be needed to determine which factors can be covered within a universal health coverage model as society cannot afford to cover all healthcare expenses for all citizens. The process by which the extent of coverage is determined requires input from a broad range of society, but is best not left to a popular vote as the exact trade-offs in cost versus service require extensive technical consideration. Oregon lawmakers, in their development of the Oregon Health Plan, created a prioritized list of diagnoses based on cost-effectiveness for impact on health. Below a certain threshold, diagnoses were simply not covered. Because of this, they were able to insure more individuals than those traditionally eligible under a Medicaid system. Since its inception in 1989, this threshold, and the diagnoses included on this list, has fluctuated with the available budget of the state.¹⁶ Such a system may warrant further exploration within Hawai'i.

There are also geographic disparities in the location of clinics, hospitals, physicians and other healthcare providers. Clearly systems of healthcare that encourage the rapid recognition and transport of acutely ill or injured patients to higher levels of care will benefit the acutely ill or injured patient. These systems are too costly to develop for routine care, although telehealth and the use of allied health personnel may provide a cost-effective means of introducing health-focused programs and chronic disease management to remotely located citizens. Hawai'i, more than any state in the nation, needs to be a national leader in telehealth given the unique geographic barriers of being an island state. In 2007, the US Department of Agriculture offered \$128 million in funding for rural telehealth,¹⁷ so resources are available to expand an existing infrastructure.

The health professional's relationship to the patient must not be understated. Remote care techniques require the same degree of cultural sensitivity as in-person sessions. Indeed, a blend of in-person and telehealth sessions may be needed to overcome barriers to delivering the health message and healthcare interventions to remote locations. Additionally, the health professional of the future must be culturally sensitive and willing to collaborate with colleagues outside of her/his own discipline to ensure effective care continuity and chronic disease management. It is this latter role that warrants our attention – more than attempts to capture discretionary visit payments from the worried well.

Next Steps

Resolution of the healthcare crisis cannot be achieved through a focus on only one factor. Rather, multiple factors must be simultaneously addressed as these issues are interlocking. Societal changes include the following:

- a) A capitated care model focused on health and chronic disease management.
- b) Universal access to a basic healthcare delivery system, and acceptance of the service limitations associated with such a model of care delivery.
- c) A universal electronic shared health information system as a mechanism by which care in such a system can be coordinated. (More about this will be covered in part two of this series.)
- d) An approach to developing state sanctioned, legal approaches to avoiding or minimizing futile care.
- e) Enhancement of systems of care (e.g., statewide trauma systems).
- f) Alignment of practitioner and hospital reimbursement with societal health goals, coupled with legal protections.
- g) A system of no-fault patient compensation when injuries occur in the course of medical care.
- h) Support of expanded training programs for physicians, nurses and other practitioners.

These features are explained in more detail in the next article in this series. A key message is that a functional healthcare reform model will not succeed by addressing one or two of these features. Indeed, a functional model may require that all features be simultaneously addressed.

Authors' Affiliations:

- Dean & Professor of Medicine, John A. Burns School of Medicine University of Hawai'i at Manoa and Barry & Virginia Weinman – Endowed Chair (J.R.H.)
- Assistant Professor of Emergency Medicine, Center for Policy & Research in Emergency Medicine, Department of Emergency Medicine, Department of Medical Informatics and Clinical Epidemiology, Oregon Health & Science University (D.A.H.)

Correspondence to:

Jerris R. Hedges MD, MS, MMM
John A. Burns School of Medicine University of Hawai'i at Manoa
651 Ilalo Street, MEB 223, Honolulu, HI 96813-5534
Ph: (808) 692-0881; Fax: (808) 692-1247; Email: Jerris@hawaii.edu

References

1. Daschle T, Lambrew JM, Greenberger SS. *Critical: What We Can Do About the Health-Care Crisis*. St. Martin Press, New York, 2008.
2. Halverson GC. *Health Care Reform Now! A Prescription for Change*. Jossey-Bass (Wiley) Publishers. San Francisco. 2007.
3. Health Insurance Costs. National Coalition on Health Care. Accessed online December 5, 2008 at <http://www.nchc.org/facts/cost.shtml>.
4. The Henry J. Kaiser Family Foundation. StateHealthFacts.org. Accessed online December 5, 2008 at <http://www.statehealthfacts.org>.
5. US Census Bureau. Projections of the Population by Selected Age Groups and Sex for the United States: 2010 to 2050. Accessed online December 5, 2008 at <http://www.census.gov>.
6. Dill MJ, Salsberg ES. *The Complexities of Physician Supply and Demand: Projections through 2025*. Association of American Medical Colleges. Washington, DC, 2008.
7. Institute of Medicine. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare*. National Academies Press, Washington, DC, 2003.
8. National Healthcare Disparities Report. *US Department of Health and Human Services Agency for Healthcare Research and Quality*. Rockville, MD, 2003.
9. Health, United States, 2007. National Center for Health Statistics. Hyattsville, MD: 2007. Accessed online December 6, 2008 at <http://www.cdc.gov/nchs/data/hsu/hsu07.pdf#027>.
10. Emanuel EJ, Ash A, Yu W, et al. Managed care, hospice use, site of death, and medical expenditures in the last year of life. *Arch Intern Med*. 2002; 162:1722-1728.
11. Gesensway D. Bridging the generation gap from Boomers to Millennials. *ACP Internist*. June 2006. Accessed online December 6, 2008 at <http://www.acpinternist.org/archives/2006/06/gap.htm>.
12. The US Rural Physician Workforce: Analysis of Medical School Graduates from 1988-1997. WWAMI Rural Health Research Center. 2008.
13. Withy K, Sakamoto D. Big Island Health Workforce Assessment. Accessed online April 6, 2009 at http://www.ahecpacific.com/index.php?option=com_content&task=blogcategory&id=46&Itemid=138.
14. Busch J, Easa D, Grandinetti A, Mor J, Harrigan R. Healthy People in Hawaii? An overview of ethnic health disparities in Hawaii for Healthy People 2010 initiative targeted health concerns. *Hawaii Med J* 2003;62:10-14.
15. Mau MK, West M, Sugihara J, Kamaka M, Mikami J, Cheng S-F. Renal disease disparities in Asian and Pacific-based populations in Hawai'i. *J National Med Assoc* 2003;95:955-963.
16. Oregon Health Plan. Oregon.gov. Accessed online December 6, 2008 at <http://www.oregon.gov/DHS/healthplan/>.
17. Pizzi R. USDA announces funding for rural telemedicine. *Healthcare IT News*. April 6, 2007. Accessed online December 6, 2008 at <http://www.healthcareitnews.com/story.cms?id=6847>.

Improving Living Renal Transplant: Lessons from a Multi-ethnic Transplant Program

Chan W. Park MD; Whitney M. Limm MD; and Linda L. Wong MD

Abstract

Living-renal transplant (LRT) is the most effective treatment for end-stage renal disease (ESRD), and innovative strategies to increase donation are needed. We reviewed our ethnically/culturally diverse program to identify factors that contribute to donors' decision to participate. Records of 110 LRT (related:unrelated=66:44) and respective donors (1999-2005) were reviewed for demographics, outcome, education, employment, language, religion, and motivation. One and 5-year graft survival were 98.2% and 92% respectively. Mean donor age was 41.1 yrs with Men:Women=62:48 and similar ethnicity to recipients. Donors tended to be married (65.5%), educated (31.8% - high school, 58.1%- additional education/degree), employed (84.4%), religious (55.9%) and English-speaking (73.8%). Successful donors were motivated: 54% traveled from off-island, and 10.9% had prior acts of altruism. Proper referral, identification & education of donors, and individual motivation of potential donors are key factors required for LRT. Continued efforts to overcome educational/language/cultural barriers are necessary to assist patients in finding donors and increasing LRT.

Introduction

The United Network for Organ Sharing (UNOS) currently reports that over 69,000 patients are waiting for renal transplants. In 2005, only 16,481 renal transplants were performed with 45% from living donors. Living renal transplant (LRT) is clearly the best treatment for ESRD in appropriate candidates.^{1,4} Patients who undergo LRT consistently perform better through all years of survival with 5-year graft survival rates of nearly 80% versus only 66.5% for deceased-donor renal transplants (DDRT).⁵

Given these benefits, few have examined the characteristics of the current living donor population and what truly motivates them to donate. Are there specific identifiable factors common among living donors? What are the motivations that inspire an individual to donate an organ despite potential risks? Our objective was to analyze the characteristics of the ethnically and culturally diverse LRT donor population in Hawai'i in an effort to identify factors which may contribute to successful LRT.

Methods and Materials

This is a retrospective study of LRT performed at Hawai'i Medical Center – East (HMC-E) between January 1, 1999 and December 31, 2005. HMC-E is a 220-bed tertiary facility, and the only transplant center in Hawai'i. It is the major referral center for renal transplant for American territories of the Pacific Basin (including American Samoa, Guam, Saipan, Micronesia and the Marshall Islands). Foreign nationals from Asian countries such as Japan, Korea, and the Philippines who desired medical care in the United States have also been referred. Since 1991, all transplants were performed by five transplant surgeons, all of whom are fellowship trained in transplant surgery.

This project was approved by the Institutional Research Board and by the Inter-hospital Board for Hawai'i Pacific Health, of which St. Francis Medical Center is a member. Potential renal transplant candidates were referred from local dialysis units to the transplant center. Prior to 2004, transplant candidates met with a transplant

nurse and a transplant surgeon. Starting in 2004, they were required to attend a two-hour "Kidney Transplant Class" during which time they were given a presentation informing them of the evaluation process, transplant operation, use of immuno-suppression, results and specifics about our center. Interested living donors were encouraged to attend these sessions and given a packet of information regarding living donation as well as a short video with donor testimonials.

Potential living donors were identified and screened for ABO compatibility, HLA and lymphocyte cross-matching tests, and medical suitability by a nephrologist. The donor then underwent psychosocial evaluation with interviews by the transplant nurse coordinator, medical social worker and transplant psychologist. All donors met with the same transplant surgeon on two separate occasions — once with the recipient present and later independently. Interpreters were made available to all potential donors if English was not their primary language and/or if requested. All LRT cases were discussed at the Renal Transplant Selection Committee meeting and LRT only proceeded with unanimous approval of the committee members.

Two transplant surgeons performed the donor nephrectomy and two transplant surgeons simultaneously performed the renal transplant procedure. Twenty-four donor nephrectomies were performed via laparoscopic hand-assisted technique. All others were performed with an open, limited subcostal incision (3 inch incision). Transplants were performed with the standard technique in the iliac fossa. Immunosuppression included induction with an IL-2 receptor antagonist (basiliximab or daclizumab) as well as steroids, mycophenolate mofetil and cyclosporine.

The following data were collected on recipients: demographics, ethnicity, ABO blood type, etiology of ESRD, dialysis status at transplant (pre-dialysis, hemodialysis or peritoneal dialysis), time spent on dialysis before transplant, delayed graft function (the need for 2 dialysis sessions), graft failure date and date of death. Data collected on donors included: demographics, ethnicity, ABO blood type, relationship to the donor, highest level of education, primary language spoken, need for interpreter, occupation, length of time they were acquainted with the recipient and current status of the donor.

General data on ethnicity and etiology of ESRD were also collected from several other sources: (1) Patients awaiting DDRT at HMC-E, (2) Patients on dialysis in Hawai'i,¹⁰ (3) Patients with ESRD on dialysis in the United States¹¹ and (4) US patients who underwent LRT / DDRT, and those on the DDRT waiting list.¹² Data on ABO blood type, relation of living donor to transplant recipient for all US patients undergoing LRT were also obtained from the OPTN/SRTR Annual report.

Ethnic distribution of the general population was also determined for Hawai'i and the United States based on the US Census data in 2000.¹³ Ethnic information from the US Census, US Renal Data System and OPTN/SRTR were identified as one of the following: White, Black, Asian, Pacific Islander, Native American, Hispanic, 2 or more ethnicities or other. Utilizing US Census data on Hawai'i and the transplant center data, the authors were able to delineate

specific Asian ethnicities including Chinese, Filipino, Japanese, Korean, as well as Vietnamese.

Demographic data were analyzed for descriptive statistics using SPSS version 14.0 software. Chi-square analyses were used to compare ethnicity for ESRD between various groups.

Results

Recipient information

Between 1999 and 2005, 110 LRT were performed: 66 were from related-donors and 44 were from unrelated-donors. For the recipients, male:female ratio was 63:47 and mean age was 43.8 years (range 3-74 years, standard deviation 15.7 years). Eight recipients were pediatric (<18 years). Ethnic distribution was as shown in Table 1. Etiology of disease was primarily glomerular diseases and distributed per Table 2. Twenty four patients were pre-dialysis, 69 were on hemodialysis and 17 were on peritoneal dialysis. Mean time on dialysis was 17.0±24.2 months (range 0-156 months). Blood type distribution was as follows: type O=39 patients, A=37 patients, B=28 patients and AB=6 patients.

Donor demographics

Mean age was 41.1 years (range 19-62, standard deviation 10.5 years) with a 62:48 ratio of men to women. Ethnic distribution was as depicted in Table 3. For the related donor group, the relationships were as follows: Sibling–35, child–14, parent–14 and other relation–3 including 2 aunts and 1 niece). The relationship in unrelated donors included 18 spouses, 6 altruistic donors, 11 friends or emotionally related to the donor, 5 other, and 4 who were involved in a donor-exchange. Of the 5 other unrelated donors, their relationships specifically included: an adopted sister, a brother-in-law, a sister-in-law, a son-in-law and a step daughter-in-law. Of the 11 friends who donated: 3 were fellow church members, 1 was an old high school friend, 5 were friends of other family members, 1 was a waiter in a restaurant that the recipient had frequented for many years, and 1 was a family friend.

Nearly two-thirds (72/110; 65.5%) of donors were married 72 of 110 (65.5%), and of these, 18 donated directly to a spouse. Sixty-two (76%) donors were affiliated with a religious group. Of these Catholicism was the most prevalent (27.5%). The broad classification of “being a Christian” represented 16.5% of donors, and approximately 5% of donors were Mormon. Other religious groups identified included Buddhism, Baha’i faith, and Jehovah’s Witness.

Nearly 90% of donors were high school graduates, and approximately 55% (60/110) of donors attended some college while nearly 25% were college graduates. Approximately 85% of the donors were employed, and of these, 85 (78%) were employed full time. There was tremendous variability among the different occupations reported, and no obvious trend existed toward specific career fields (i.e. service, professional, etc). Nearly 72% of donors resided in the state of Hawai’i, but 29 donors (26.6%) were residing on Neighbor Islands, 17 (15.6%) were from US Mainland, and 11 were foreign nationals (5 from the Philippines and 6 from the Republic of Korea).

With a multi-ethnic population, language was an important factor in the LRT process. While nearly 74% of donors spoke English, 15% spoke a Filipino dialect, 6% spoke a Pacific Island dialect, and

Ethnicity	Number of Patients
Afro-American	3
Caucasian	17
Hispanic	2
Asian	56
Filipino	40
Japanese	15
Korean	5
Vietnamese	3
Chinese	2
Chinese/Filipino	1
Pacific Islander	10
2 or more ethnicities	22

Etiology of ESRD	Number of patients
Glomerular diseases	46
Diabetes mellitus	24
Hypertension	24
Polycystic kidney disease	10
Tubular diseases	4
Congenital	1
Unknown	1

Ethnicity	Number of Patients
Afro-American	3
Caucasian	24
Hispanic	3
Asian	46
Filipino	23
Japanese	14
Korean	4
Vietnamese	1
Chinese	3
Chinese/Filipino	1
Pacific Islander	10
2 or more ethnicities	24

2% spoke Japanese. A significant number of non-English speakers (26%) required some translation services.

Twenty-seven donors had significant smoking, alcohol and illicit drug histories. 20 regularly consumed alcohol (defined as 2 or more drinks per day), have used illicit drugs in the past (including marijuana, cocaine, intravenous drugs), and/or smoked cigarettes. Another subgroup of donors (7/110) were engaged in ongoing psychotherapy or taking medications for diagnoses ranging from depression to anxiety.

Ethnicity (%)	HI population (%)	HI/LRT- Donors (%)	HI/LRT-Recipients (%)	HI/DD* waiting list (%)	HI/new ESRD patients (%)	HI/all ESRD patients
White	26.5	21.8	15.5	3.4	7.5	8.1
Black	2.2	2.7	2.7	0.6	0.2	1
Asian	41.8	41.8	50.9	64.4	41.3	35.7
PI	9.1	9.1	9.1	10.1	45.2	50.9
NA	0.3	0	0	0	0.2	0
2 or more	20.1	21.8	20	21.5	4.1	2.6
Hispanic	0	0	0	0	0	0
Other	0	2.7	1.8		1.5	1.7
Total (%)	100	99.9	100	100	100	100

Several of our donors were involved in prior acts of altruism including volunteering at local hospitals and community centers, being actively involved in church related charity organizations, regularly donating blood, and being adoptive parents. Although not specifically asked during interviews, 3 donors related that they were regular volunteers, while an additional 2 donors were involved in active church charity groups. 2 donors were noted to be parents of adopted children, and 5 donors had previously donated blood regularly.

Ethnicity

The distribution of ethnicity of the Hawai'i population as determined by the 2000 Census data is shown in Table 4. This was compared to all the donors and recipients of LRT in this study, the current deceased-donor waiting list, all ESRD started on dialysis in 2005 and all ESRD patients in Hawai'i on dialysis. There was no significant difference in ethnic distribution of the entire population of Hawai'i vs LRT donors or LRT donors vs recipients. There was a significant difference in patients who received LRT compared to all patients on the deceased donor waiting list ($p < 0.001$) and all patients with ESRD in Hawai'i. ($p < 0.001$) Pacific Islanders comprise more than 50% of ESRD patients currently on dialysis while only 9.1% of LRT and 10.1% of those on the deceased donor waiting list.

Outcome –recipients and donors

Of 110 LRT recipients, one patient had delayed graft function but this resolved completely. One patient had primary graft nonfunction due to renal vein thrombosis and an undiagnosed hypercoagulable state. One and 5- year graft survival was 98.2% and 92% respectively. Of the 110 grafts, 104 are currently functioning. Three patients died with a nonfunctioning graft. Two patients had late graft failure and required return to hemodialysis. One of these was due to recurrent disease and the second was due to drug noncompliance.

Of the 110 donors, 109 are still alive and with normal renal function. One donor died of an illicit drug overdose 28 months after kidney donation. This patient had used illicit drugs prior to transplant but underwent intensive rehabilitation and was drug free for a year prior to donation.

Discussion

LRT is clearly the best renal-replacement therapy for patients with ESRD. In order to further increase LRT, physicians need to assist patients with identifying potential donors. Patients are frequently too afraid to ask relatives and friends to donate. Whom should they ask? How do they ask? What if my family members say “no”; then whom do I ask? What type of person donates?

A number of studies have demonstrated that women were more willing to undergo LRT.^{14,15} However, Kwon et al also showed that long-term graft survival was significantly impacted for female to male donation and predicted that male donor gender was a positive risk factor for long-term graft survival. This was attributed to anatomic differences between genders, with women having approximately 17% fewer nephrons than men.¹⁶ This study had a predominance of male donors (62 vs 48 women). Although the greatest number of graft failures was found in the female to male group (3 of 31 transplanted), this was no different from graft failure in male to male (2 of 32), male to female (2 of 30) and female to female (1 of 17). No gender differences in LRT outcomes can thus be demonstrated in this study.

Several transplant programs have studied the psychodynamics of the marriage and found derived benefits following LRT including improved marital bonds, restoration of functional roles, and enhanced relationships among various family members.¹⁷⁻²¹ As with other studies, 65.5% of donors were married, and most identified their spouse as their primary support. In addition, most of the 21 donors who were ‘single’ reported that they were in stable, significant relationships. Only 13 (11.8%) donors were widowed or divorced. Eighteen donors (16.4%) donated to their spouse. These findings are similar to others which suggest that marital and family relationships impact positively on a person’s willingness to participate in LRT.^{17,18}

There is little information on the impact of religion on LRT. Prior studies have noted a possible negative relationship between religion and willingness to participate in living organ donation.^{22,23} Direct conflict of religious beliefs with organ donation and the potential need for blood transfusions may be contributing factors, but we did not encounter such issues. In our study, 62% of donors were affiliated with a religious group and less than 15% denied being religious. Several of our LRTs occurred as a direct result of church involvement with three unrelated transplants performed between church members. Religious affiliation may sometimes facilitate LRT, and our program welcomes all religious groups in LRT participation.

Although there are theoretic education/language barriers that hinder LRT, our donor group was no different than the general US population in terms of education level.²⁵ This transplant program requires interested patients to attend a class where topics such as kidney disease, future sequelae of illness, and the risks and benefits of transplantation are discussed in a simplified manner. Potential donors and interpreters are encouraged to accompany them at these sessions. Approximately 26% utilized our translation services. Perhaps these efforts to deal with educational/language barriers has allowed our donors to more readily participate in LRT.

There are potential cultural barriers as well. Previous studies on Asian attitudes on living organ donation have mentioned “family apprehensions, medical care costs, and nonexistent social security” as barriers to organ donation.²⁷ Andresen et al also demonstrated that Asian patients in the United States had vastly different expectations with regards to medical care and organ donation.²⁸ Because Hawai‘i is such a multi-cultural society, our health care system/staff are generally quite culturally-sensitive. Focus group studies on organ donation in Filipinos in Hawai‘i have indicated that 75% of comments reflected a positive awareness of cultural issues regarding organ donation.²⁹ From our current study, it appeared that a number of Asian donors mentioned having strong sense of “family obligation” as a motivation toward LRT.

Interestingly, we found some LRT differences based on ethnicity. In particular, 50.9% of ESRD patients on dialysis are of Pacific Islander ethnicity compared to the far fewer Pacific Islanders who underwent LRT (9.1%) and DDRT (10.1%). This is similar to findings by Hall et al, in which Asians and Pacific Islanders had lower mortality on dialysis but a significantly lower transplant rate.³⁰ Potential contributing factors to this disparity may include the higher presence of medical co-morbidities, high BMI, insurance status, noncompliance and patient referral. A number of studies have showed that delayed nephrology care is more prevalent in minorities and those with a lower socioeconomic status. Furthermore, late nephrology care has been associated with lower access to the kidney transplant waiting list and a lower rate of kidney transplantation.^{31,32} Cultural, educational and language issues may all be barriers in Pacific Islanders, however this would need to be studied in greater depth to determine the disparity in access to LRT.

Several studies mention experiences with living donors who have a history of psychiatric problems and substance abuse. Most of these were rejected from LRT programs due to issues such as depression, bipolar disorder, bulimia, and active substance abuse.^{14,33-35} All donors in this study were carefully screened by the social worker and psychologist prior to LRT, and about 30% had a history of prior substance abuse or psychological problem. At the time of donation, no donors were actively involved in substance abuse, and only donors with mild (depression/anxiety) or a distant history of psychiatric diagnoses were considered. From the specific comments to social workers, one might conjecture that these patients are donating as a means to “feel good about themselves” or as a means to redeem themselves for prior problems, but it appears that these donors, if carefully screened and able to participate in the evaluation process including giving informed consent, are able to successfully undergo living donation.

Living donors are extremely motivated and by definition, are altruistic individuals. Due to the geographic location of this transplant

center on the island of O‘ahu, more than 50% of donors traveled by plane to donate their kidneys. Ten percent of the donors traveled from outside the United States and in excess of 3500 miles to donate. In addition, several donors reported involvement in prior acts of altruism including blood donation, volunteering at hospitals, involvement in community and church volunteer groups, and adopting children.

There are limitations to this study, in that it was retrospective and a standardized specific questionnaire was not used to assess donors’ motivation. Information on prior altruistic acts or exact motivations for donation may have not been consistently recorded. Future studies are also needed to determine the short and long-term psychosocial impact of living donation. In addition, there is a general lack of data on characteristics of living renal donors and this study is an attempt to understand the characteristics in this special population.

In summary, our study outlines some initial trends among minority LRT populations, and our data highlight some significant characteristics of the living donor that may contribute to successful LRT. Given these findings, we need better strategies to assist patients in identifying and approaching potential donors. Donors can be men or women, more frequently married or in stable relationships and no more educated or employed than the rest of the general population. Donors can be found in not only relatives, but friends, co-workers and church members. Most importantly, donors are highly motivated and altruistic—often doing other good deeds and traveling long distances to donate.

Manuscript presented as a poster presentation at Pacific Coast Surgical Association, February 18, 2007.

Authors’ Affiliation:

Transplant Institute, Hawai‘i Medical Center-East (formerly St. Francis Medical Center) and the Department of Surgery, John A. Burns School of Medicine, Honolulu, HI 96817.

Correspondence to:

Linda L. Wong MD
2226 Liliha Street, Suite 402
Honolulu, HI 96817
Ph: (808) 523-0166
Fax: (808) 528-4940
Email: hepatoma@aol.com

References

1. Davis C, Delmonico F. Living-donor kidney transplantation: A review of the current practices for the live donor. *J Am Soc Nephrol* 2005; 16: 2098-2110.
2. Spital A. Increasing the pool of transplantable kidneys through unrelated living donors and living donor paired exchanges. *Seminars in Dialysis* 2005; 18: 469-473.
3. Barry JM, Conlin M, Golconda M, Norman D. Strategies to increase living donor kidney transplants. *Urology* 2005; 66: 43-36.
4. O’Conner KJ, Delmonico FL. Increasing the supply of kidneys for transplantation. *Seminars in Dialysis* 2005; 18: 460-462.
5. <http://www.optn.org/latestData/rptStrat.asp>
6. Park K, Lee JH, Huh KH, Kim SI, Kim YS. Exchange living-donor kidney transplantation: diminution of donor organ shortage. *Transplantation Proceedings* 2004; 36: 2949-2951.
7. Gurkan A, Kacar SH, Varilsuha C, Tilif S, Coker I, Karaca Cet al. Exchange kidney transplantation: a good solution in living kidney transplantation. *Transplantation Proceedings* 2004; 36: 2952-2953.
8. Friedman EA, Friedman AL. Payment for donor kidneys: pros and cons. *Kidney International* 2006; 69: 960-962.
9. Matas AJ. The case for living kidney sales: rationale, objections and concerns. *American Journal of Transplantation* 2004; 4: 2007-2017
10. <http://www.network17.org/informerservices/annrep03>
11. <http://www.usrds.org>
12. <http://www.ustransplant.org>
13. <http://www.factfinder.census.gov>
14. Oien CM, Reisaeter AV, Leivestad T, Pfeiffer P, Fauchald P, Os I. Gender imbalance among donors in living kidney transplantation: the Norwegian experience. *Nephrol Dial Transplant* 2005; 20: 783-789.
15. Jendrisak MD, Hong B, Shenoy S, Lowell J, Desai N, Chapman W et al. Altruistic living donors: evaluation for nondirected kidney or liver donation. *American Journal of Transplantation* 2006; 6: 115-120.

*For Tadd, the only thing above par
is his healthcare coverage.*

**With a variety of flexible
and comprehensive plans
from HMAA, Tadd's
healthcare coverage is
perfectly lined up with
his healthcare needs.**

Benefits include:

- Alternative healthcare, including acupuncture, chiropractic and naturopathic care
- Health Education and Intervention Program
- An extensive provider network, including coverage when traveling to the mainland
- High-quality customer service and 24/7 online services for members



**20th
anniversary**

*Celebrating two decades
of healthcare coverage for
Hawaii's small businesses*

Your Health Is Our Business

Phone: **808-591-0088** / Toll Free: **800-621-6998**

www.hmaa.com

MKT Ext-26 A-03 04 0804 020609

16. Kwon OJ, Kwak JY, Kang CM. The impact of gender and age matching for long-term graft survival in living donor transplantation. *Transplantation Proceedings* 2005; 37: 726-728.
17. Roozbeh J, Mehdizadeh AR, Iadfar MA, Razmkon A, Salahi H, Malek-Hosseini, SA. Comparison of spousal with other donor groups: study of a single center. *Transplantation Proceedings* 2006; 38: 562-563.
18. Watanabe T, Hiraga S. Influence on family psychodynamics on spousal kidney transplantation. *Transplant Proc* 2002; 34: 1145-1147
19. Mathieson PW, Jolliffe D, Jolliffe R, Dudley CR, Hamilton K, Lear PA. The spouse as a kidney donor: ethically sound? *Nephrol Dial Transplant* 1999; 14: 46-48
20. Terasaki PI, Cecka JM, Gjertson DW, Cho YW. Spousal and other living renal donor transplants. *Clin Transplant* 1997; 11: 269-284
21. Soullilou J. Kidney transplantation from spousal donors. *N Engl J Med* 1995; 333-379
22. Verna EC, Hunt KH, Renz JF, Rudow DL, Hafliker S, Dove LM et al. Predictors of candidate maturity among potential living donors. *American Journal of Transplantation* 2005; 5: 2549-2554
23. Boulware LE, Ratner LE, Sosa JA, Cooper LA, LaVeist TA, Powe NR. Determinants of willingness to donate living related and cadaveric organs: identifying opportunities for intervention. *Transplantation* 2002; 73: 1683-1691.
24. Woodle ES, Boardman R, Bohnengel A, Downing K. Influence of educational programs on perceived barriers toward living donor kidney exchange programs. *Transplantation Proceedings* 2005; 37: 602-604.
25. <http://www.census.gov/population/www/socdemo/education.html>
26. <http://www.ers.usda.gov/StateFacts/HI.html>
27. Rizvi AS, Naqvi SA, Hashmi A, Akhtar F, Hussain M, Ahmet E, et al. Improving kidney and live donation rates in Asia: living donation. *Transplant Proc* 2004;36:1894-5.
28. Andresen J. Cultural competence and health care: Japanese, Korean and Indian patients in the United States. *J. Cult Divers* 2001;8:109-21.
29. Albright CL, Glanz K, Wong L, Delacruz MR, Abe L, Sagayadoro TL. Knowledge and attitudes about deceased donor organ donation in Filipinos: a qualitative assessment. *Transplant Proc* 2005;37:4153-8.
30. Hall YN, Sugihara JG, Go AS, Chertow GM. Differential mortality and transplantation rates among Asians and pacific islanders with ESRD. *J Am Soc Nephrol* 2005; 16: 3711-3720.
31. Winkelmayer WC, Glynn RJ, Levin R, Owen WF, Avorn J. Determinants of delayed nephrologists referral in patient with chronic kidney disease. *Am J. Kidney Dis* 2001;38:1178-84.
32. Winkelmayer WC, Mehta J, Chandraker A, Owen WF, Avorn J. Predialysis nephrologists care and access to kidney transplantation in the United States. *Am J. Transplant* 2007;7:872-9.
33. Gilbert JC, Brigham L, Batty Jr. DS, Veatch RM. The nondirected living donor program: a model of cooperative donation, recovery and allocation of living donor kidneys. *Am J of Transplantation* 2005; 5:167-174.
34. McCurdie, FJ, Pascoe MD, Broomberg CJ, Kahn D. Outcome of assessment of potential donors for live donor kidney transplants. *Transplantation Proceedings* 2005; 37: 605-606.
35. Reimer J, Rensing A, Haasen C, Philipp T, Pietruck F, Franke GH. The impact of living-related kidney transplantation on the donor's life. *Transplantation* 2006; 81: 1268-1273.

First reported United States case of *Legionella pneumophila* serogroup 1 pneumonia in a patient receiving anti-tumor necrosis factor- α therapy

Sadao Jinno MD; Stephen Pulido MD; and Brian C. Pien MD

Abstract

Legionellosis has been reported to be an extremely rare disease in Hawai'i. The authors report a case of a 67-year-old woman with a history of rheumatoid arthritis treated with long-term adalimumab who developed severe right-sided community-acquired pneumonia and a parapneumonic effusion. *Legionella pneumophila* serogroup 1 was confirmed as the microbiologic cause based on a positive urine *Legionella* antigen as well as direct fluorescent antibody and *Legionella* culture of bronchoalveolar lavage. This is the first reported case of *Legionella* pneumonia associated with anti-tumor necrosis factor (TNF)- α therapy in the United States. There have been several reports of an increased association between legionellosis and treatment with a TNF- α antagonist. With the increasing use of TNF- α antagonists, *Legionella pneumophila* should be recognized as a potential re-emerging pathogen. Clinicians should particularly consider the diagnosis of legionellosis in patients who are immunocompromised, including those who receive anti-TNF- α therapy, or who have severe pneumonia. In such cases, there should be a low threshold for including empiric *Legionella* antimicrobial coverage until the diagnosis can be confirmed or reasonably excluded.

Introduction

Tumor necrosis factor (TNF- α) is a pro-inflammatory cytokine which is primarily produced by activated macrophages in response to various immunologic stimuli.¹ It aids in antigen presentation, intracellular killing of microorganisms, granuloma formation and maintenance.² Consequently, TNF- α plays an important role in host resistance against intracellular pathogens, including mycobacteria and fungi.³ Treatment with TNF- α antagonists has been associated with an increased risk of infection due to *Mycobacterium tuberculosis*,⁴ *Listeria monocytogenes*,⁵ *Aspergillus fumigatus*,⁶ *Pneumocystis jirovecii*,⁷ *Histoplasma capsulatum*,⁸ and *Coccidioides immitis*.⁹

Legionella pneumophila serogroup 1 causes about 80% of known human legionellosis and 2-9% of community-acquired pneumonia episodes. The annual incidence rate was 0.40 cases per 100,000 persons in the United States during 2004 and the average annual incidence in Hawai'i over the past 15 years was 0.26 cases per 100,000 persons. There have been 14 cases of *L. pneumophila* infection in patients treated with TNF- α antagonists reported in Europe, including six which were associated with the use of adalimumab.¹⁰⁻¹³ This is the first case of *Legionella* pneumonia in a patient receiving adalimumab in the United States. Although legionellosis is considered to be a rare disease in Hawai'i, it may be under-recognized, especially with the increasing use of TNF- α antagonists and challenging microbiologic diagnosis.

Case Report

A 67-year-old Japanese woman was hospitalized with a five-day history of fever, chills, slightly productive cough, and shortness of breath. She had a long-standing history of rheumatoid arthritis that had been treated with adalimumab 40mg subcutaneous injections every two weeks for two years and 15 mg of weekly oral methotrex-

ate. The patient also had an ongoing 40 pack-year history of smoking and spent part of her time living in a local condominium with her husband who was receiving outpatient chemotherapy. There were no known ill contacts or recent travel outside the state of Hawai'i.

On initial presentation, the patient had a temperature of 101°F, respiratory rate of 28 per minute, heart rate of 99 per minute, oxygen saturation 97% on nasal cannula 2 liters per minute supplemental oxygen, and blood pressure of 90/50. Lung examination revealed decreased aeration and increased dullness to percussion at the right posterior lower chest. Laboratory studies showed a serum sodium of 128 mEq/L and white blood cell count of 15,600/mm³ including 61% immature neutrophils. Chest computerized tomography (CT) scan showed dense lobar consolidation of the entire right lower lobe and part of the middle lobe (Figure 1). The patient was



Figure 1.— Dense lobar consolidation of the entire right lower lobe and part of the middle lobe.

admitted to the intensive care unit and empirically treated with vancomycin, cefepime, and azithromycin. The sputum gram stain showed >25 white blood cells per high-power field but no organisms were seen. Subsequent routine bacterial culture only grew mixed oropharyngeal flora and both blood culture sets were sterile. A urine *Legionella pneumophila* serogroup 1 antigen (Binax NOW, Scarborough, Maine) was positive, so the antibiotics were changed to moxifloxacin 400mg intravenous daily and oral rifampin 600mg daily. The patient initially seemed to improve, however, the fever, dyspnea, cough, and hypoxemia recurred within several days and the white blood cell count increased to 22,000/mm³. Lymphocyte panel, immunoglobulin levels, and HIV antibody testing was not performed. Multiple repeat routine blood, sputum, and urine cultures were all unremarkable, however a follow-up chest CT scan showed interval development of a large loculated right-sided pleural effusion. Bronchoscopy was performed after the patient had been hospitalized for 17 days on antibiotic therapy. Gross visual airway inspection

only demonstrated mild endobronchial erythema. Routine bacterial, fungal, mycobacterial cultures, and cytology of the bronchoalveolar lavage (BAL) fluid were all unremarkable. Direct fluorescent antibody (DFA) against *L. pneumophila* serogroup 1 on the BAL fluid was positive. Subsequent BAL fluid culture on specialized media grew *L. pneumophila* serogroup 1. Due to persistent hypoxemia, dyspnea, and moderately severe cough, right thoracostomy tube drainage was performed and yielded about one liter of thin serosanguinous pleural fluid. The fluid analysis was consistent with a parapneumonic effusion and all cultures, including specifically for *Legionella* and obligate anaerobic bacteria, were negative. The patient was weaned off supplemental oxygen and discharged. At six months of follow-up, the patient had fully recovered but had not yet resumed anti-TNF therapy.

Discussion

Legionella species are fastidious intracellular gram-negative bacilli that require special microbiologic culture media (buffered cysteine yeast extract agar). Due to difficulty of culture isolation and the frequent use of empiric antimicrobial treatment which includes *Legionella* coverage, the actual incidence of *Legionella* pneumonia is likely under-detected. The urine antigen test is simple to perform, rapid, highly specific, and a noninvasive method for detecting *Legionella pneumophila* serogroup type 1. The sensitivity has been reported to range from 70-90% with a specificity >95% compared to culture, serology, and DFA.¹⁴ Collecting acute and convalescent sera to establish the diagnosis of legionellosis is laborious, time-consuming, and impractical for making real-time clinical decisions. An in-house validated polymerase chain reaction (PCR) assay for *Legionella* species has recently become available on lower respiratory tract specimens and pleural fluid (ARUP Laboratories, Salt Lake City, Utah) with a reported sensitivity of 80-100% compared to conventional diagnostic methods.¹⁴

The clues to suspecting *Legionella* pneumonia include fever, severe pneumonia, mild diarrhea, altered mentation, patients with chronic immunosuppression or significant smoking history, and failed clinical response to beta-lactam or aminoglycoside antibiotics. Laboratory studies often reveal hyponatremia, slightly elevated hepatic transaminases, and a sputum gram stain with many neutrophils but no organisms seen. Parapneumonic pleural effusions are often seen with *Legionella* pneumonia. According to the 2007 Infectious Disease Society of America/American Thoracic Society consensus guidelines on the management of community-acquired pneumonia, urine antigen testing for *L. pneumophila* serogroup 1 should be considered for patients with severe CAP requiring intensive care unit admission, failed outpatient antimicrobial therapy, ongoing alcohol abuse, recent travel within the previous two weeks, or presence of a pleural effusion.¹⁵

The first-line therapy for legionellosis is either a newer macrolide (azithromycin) or a respiratory fluoroquinolone (levofloxacin) that achieve high intracellular distribution. Rifampin can be added for severe infections, particularly endocarditis, or when the patient appears to be failing therapy with a first-line agent. This is based on early anecdotal reports where the addition of rifampin appeared superior to erythromycin monotherapy.¹⁶ The recommended duration of therapy can be as long as 21 days in immunocompromised hosts or those with severe disease and depends greatly on the clinical

response to therapy, including defervescence. It is noteworthy that the organism was cultured from the BAL specimen after the patient had received 17 days of active antimicrobial therapy against *Legionella spp.*, including rifampin. Based on a review of the available literature, antimicrobial resistance of *Legionella spp.* against macrolides, respiratory fluoroquinolones, and rifampin has not been described and no standardized antimicrobial susceptibility testing criteria exists.

There have been 14 reported cases of *L. pneumophila* infection in patients treated with TNF- α antagonists. The clinical characteristics of these cases compared to the patient described in this report are compared in Table 1. The median age was 47 years (range 27-69), 64% of patients were women, and the median duration of anti-TNF- α therapy was 34 weeks (range 1 week-5 years). The diagnosis was confirmed by urine antigen in 87%, culture in 33%, serology in 7%, and PCR in 7% of cases. Seven of 15 (47%) cases received adalimumab. Eleven patients were treated with a fluoroquinolone and five required admission to an intensive care unit, resulting in one death. Another study in France reported an increased relative risk ratio of 16-21 for legionellosis among persons who received treatment with a TNF- α antagonist compared with those who had not received a TNF- α inhibitor.¹³

Based on meta-analysis of randomized placebo-controlled clinical trials performed with infliximab and adalimumab, these TNF- α antagonists were associated with pooled odds ratio of 2.0 (95% CI 1.3-3.1) for serious infections, including tuberculosis, histoplasmosis, coccidiomycosis, cryptococcosis, aspergillosis, *Pneumocystis* pneumonia, listeriosis, nocardiosis, and nontuberculous mycobacterial infections.¹⁷ There are also significant structural differences among the commercially available TNF- α antagonists. Adalimumab, infliximab, and certolizumab pegol are antibody-based molecules as opposed to etanercept which is a smaller fusion peptide. The antibody-based formulations tend to circulate in the body for several months, thereby having a more sustained and profound immunomodulatory effect on cytokine release by macrophages compared with etanercept.¹⁸ Consequently, a recent study found that the risk of granulomatous infection was about three-fold greater among patients who received infliximab than those who received etanercept.¹⁹

Legionellosis outbreaks have been well-described from environmental and potable water sources such as air conditioning cooling ducts, as was first discovered in the 1976 American Legionnaire's conference in Philadelphia. Most reported cases of legionellosis are sporadic and the presumed environmental source remains elusive. Our patient spent part of her time living in a local condominium while her husband was receiving outpatient chemotherapy treatments but he did not develop a symptomatic *Legionella* infection.

In summary, we report a case of severe community-acquired pneumonia and symptomatic parapneumonic effusion due to *Legionella pneumophila* serogroup 1 in a patient receiving adalimumab. There is an associated risk of *Legionella* infections and TNF- α antagonist therapy. With the increasing use of anti-TNF- α agents and the challenges of microbiologic confirmation, legionellosis is likely under-recognized and may represent a re-emerging infection. Clinicians should maintain an index of suspicion in patients with risk factors for *Legionella* infection, including the use of anti-TNF- α therapy. If there is reasonable clinical suspicion, the diagnosis of legionellosis should be sought by performing the urine *Legionella* antigen

Table 1

Patient	Age, years	Sex	Anti TNF- α drug regimen	Treatment duration	Indication for use (disease duration)	Concomitant immunosuppressive drugs	Comorbidity	Community acquired pneumonia?	Diagnosis (serogroup)	Antibiotic therapy	Outcome
1	43	M	ALMB (two 40mg doses/month)	71 weeks	RA	MTX, prednisone	Diabetes mellitus	unknown	LPAGU positive (LP1)	FLQ	Recovered
2	55	F	ALMB (40 mg per month)	26 weeks	RA (30 years)	MTX (7.5 mg per week), prednisone (8 mg per day)	None	Yes	LPAGU positive (LP1)	Macrolide, rifampicin	Recovered
3	67	M	Etanercept (two 25 mg doses per week)	16 weeks	RA (3.5 years)	MTX (12.5 mg/week), prednisolone (10 mg per day)	Tobacco-related COPD	Yes	Isolate from culture of BAL; LPAGU positive (LP1)	Rifampicin, FLQ	Admitted to ICU, recovered
4	46	F	IFMB	73 weeks	Pyoderma gangrenosum (1.5 years)	Prednisone (10 mg per day), pipobroman (75 mg per day)	Primary thrombocytopenia	Yes	LPAGU positive (LP1)	Macrolide, rifampicin	Admitted to ICU, alive at discharge
5	58	M	IFMB (5 mg per kg of body weight by infusion)	3 weeks	Psoriasis (45 years)	None	Smoker (15 packs per year)	Yes	LPAGU positive, PCR-positive sputum samples (LP1)	Macrolide, FLQ	Recovered
6	40	M	ALMB (two 40 mg doses per month)	34 weeks	RA (4 years)	Sulfasalazine (2 g per day), betaamethasone (2 mg per day)	Diabetes mellitus; tobacco related COPD	Yes	LPAGU positive (LP1)	Rifampicin, FLQ	Recovered
7	45	F	ALMB (two 40 mg doses per month)	36 weeks	RA with juvenile onset (33 years)	MTX (15 mg per week), prednisone (5 mg per day)	Smoker	Yes	LPAGU positive (LP1)	Macrolide then FLQ	Recovered
8	66	F	ALMB (two mg doses per month)	45 weeks	RA (10 years)	MTX (15 mg per week)	None	Yes	LPAGU negative, seroconversion (LP6)	FLQ, ceftriaxone	Recovered
9	47	M	ALMB (two 40 mg doses per month)	50 weeks	RA (3 years)	Prednisone (5 mg per day)	Smoker; water cleaning system worker	Yes	LPAGU positive, positive BAL culture result (LP1)	Rifampicin, FLQ	Admitted to ICU, recovered
10	69	F	Etanercept (two 25 mg doses per week); IFMB (3 mg per kg of body weight by infusion)	45 weeks	RA (10 years)	MTX (7.5 mg per week), prednisone (5 mg per day)	None	Yes	LPAGU positive (LP1)	FLQ	Recovered
11	27	F	IFMB (250 mg dose by infusion)	1 week	CD (5 years)	Azathioprine (200 mg per day), prednisone (15 mg per day)	None	Yes	LPAGU positive, positive BAL culture result	Rifampicin, FLQ	Recovered
12	43	F	IFMB (3 mg per kg of body weight)	2 weeks	RA (8 years)	MTX, prednisone (5 mg per day)	None	Yes	LPAGU positive (LP1)	Macrolide	Recovered
13	56	unknown	INFMB (5 mg per kg by infusion)	3 weeks	Psoriasis (10 years)	Prednisolone (20 mg per day)	None	No (hospital acquired)	Positive BAL culture result (LP4 and LP10)	Macrolide, FLQ	Admitted to ICU, died of septic shock
14	38	F	INFMB	2 weeks	RA	MTX	None	Yes	LPAGU positive (LP1)	Macrolide	Recovered
15	67	F	ALMB (two 40 mg doses per month)	5 years	RA (12 years)	MTX	Smoker	Yes	LPAGU positive (LP1) BAL culture result	Rifampin, FLQ	Admitted to ICU, recovered

ALMB, Adalimumab; ARDS, acute respiratory distress syndrome; AS, ankylosing spondylitis; BAL, bronchoalveolar lavage fluid; BL, bilateral; CD, Crohn disease; COPD, chronic obstructive pulmonary disease; FLQ, fluoroquinolone; ICU, intensive care unit; IFMB, Infliximab; LP1, L. pneumophila serogroup 1; LP6, L. pneumophila serogroup 6; LPAGU, Legionella urinary antigen; MTX, methotrexate; RA, rheumatoid arthritis; UL, unilateral. a The equivalent of 13 mg of prednisone per day. b Seroconversion of 1:16 to 1:256.

assay or obtaining lower respiratory tract specimens for specific *Legionella* culture, direct fluorescent antibody, or PCR. In such cases, empiric antimicrobial therapy should include *L. pneumophila* until the diagnosis can be reasonably excluded.

Authors' Affiliation:

- University Hospitals of Cleveland Case Medical Center, Cleveland, OH 33118 (S.J.)
- University of Hawai'i John A. Burns School of Medicine, Honolulu, HI 96813 (S.P.)
- Department of Medicine, University of Hawai'i John A. Burns School of Medicine, Honolulu, HI 96813 (B.C.P.)

Correspondence to:

Sadao Jinno MD
 University Hospitals of Cleveland Case Medical Center
 30 Severance Circle #712
 Cleveland, Ohio 44118
 Ph: (808) 352-3813
 Email: sadaoj@gmail.com

References

1. Choy EH, Panayi GS. Cytokine pathways and joint inflammation in rheumatoid arthritis. *N Engl J Med.* Mar 22 2001;344(12):907-916.
2. Gardam MA, Keystone EC, Menzies R, et al. Anti-tumour necrosis factor agents and tuberculosis risk: mechanisms of action and clinical management. *Lancet Infect Dis.* Mar 2003;3(3):148-155.
3. Hyrich KL, Silman AJ, Watson KD, Symmons DP. Anti-tumour necrosis factor alpha therapy in rheumatoid arthritis: an update on safety. *Ann Rheum Dis.* Dec 2004;63(12):1538-1543.
4. Keane J, Gershon S, Wise RP, et al. Tuberculosis associated with infliximab, a tumor necrosis factor alpha-neutralizing agent. *N Engl J Med.* Oct 11 2001;345(15):1098-1104.
5. Slifman NR, Gershon SK, Lee JH, Edwards ET, Braun MM. *Listeria monocytogenes* infection as a complication of treatment with tumor necrosis factor alpha-neutralizing agents. *Arthritis Rheum.* Feb 2003;48(2):319-324.
6. De Rosa FG, Shaz D, Campagna AC, Dellaripa PE, Khettry U, Craven DE. Invasive pulmonary aspergillosis soon after therapy with infliximab, a tumor necrosis factor-alpha-neutralizing antibody: a possible healthcare-associated case? *Infect Control Hosp Epidemiol.* Jul 2003;24(7):477-482.
7. Tai TL, O'Rourke KP, McWeeny M, Burke CM, Sheehan K, Barry M. Pneumocystis carinii pneumonia following a second infusion of infliximab. *Rheumatology (Oxford).* Aug 2002;41(8):951-952.
8. Wood KL, Hage CA, Knox KS, et al. Histoplasmosis after treatment with anti-tumor necrosis factor-alpha therapy. *Am J Respir Crit Care Med.* May 1 2003;167(9):1279-1282.
9. Bergstrom L, Yocum DE, Ampel NM, et al. Increased risk of coccidioidomycosis in patients treated with tumor necrosis factor alpha antagonists. *Arthritis Rheum.* Jun 2004;50(6):1959-1966.
10. Wondergem MJ, Voskuyl AE, van Agtmael MA. A case of legionellosis during treatment with a TNFalpha antagonist. *Scand J Infect Dis.* 2004;36(4):310-311.
11. Li Gobbi F, Benucci M, Del Rosso A. Pneumonitis caused by Legionella pneumoniae in a patient with rheumatoid arthritis treated with anti-TNF-alpha therapy (infliximab). *J Clin Rheumatol.* Apr 2005;11(2):119-120.
12. Eisendle K, Fritsch P. Fatal fulminant legionnaires' disease in a patient with severe erythrodermic psoriasis treated with infliximab after long-term steroid therapy. *Br J Dermatol.* Mar 2005;152(3):585-586.
13. Tubach F, Ravaud P, Salmon-Ceron D, et al. Emergence of Legionella pneumophila pneumonia in patients receiving tumor necrosis factor-alpha antagonists. *Clin Infect Dis.* Nov 15 2006;43(10):e95-100.
14. Murdoch DR. Diagnosis of Legionella infection. *Clin Infect Dis.* Jan 1 2003;36(1):64-69.
15. Mandell LA, Wunderink RG, Anzueto A, et al. Infectious Diseases Society of America/American Thoracic Society consensus guidelines on the management of community-acquired pneumonia in adults. *Clin Infect Dis.* Mar 1 2007;44 Suppl 2:S27-72.
16. Dournon E, Mayaud C, Wolff M, et al. Comparison of the activity of three antibiotic regimens in severe Legionnaires' disease. *J Antimicrob Chemother.* Oct 1990;26 Suppl B:129-139.
17. Bongartz T, Sutton AJ, Sweeting MJ, Buchan I, Matteson EL, Montori V. Anti-TNF antibody therapy in rheumatoid arthritis and the risk of serious infections and malignancies: systematic review and meta-analysis of rare harmful effects in randomized controlled trials. *JAMA.* May 17 2006;295(19):2275-2285.
18. Hochman D, Wolff B. Risk of serious infections and malignancies with anti-TNF antibody therapy in rheumatoid arthritis. *JAMA.* Nov 8 2006;296(18):2203; author reply 2203-2204.
19. Wallis RS, Broder MS, Wong JY, Hanson ME, Beenhouwer DO. Granulomatous infectious diseases associated with tumor necrosis factor antagonists. *Clin Infect Dis.* May 1 2004;38(9):1261-1265.

Visit
www.hawaiiomedicaljournal.org
to see the Hawai'i Medical Journal online.

Viral Hepatitis in a Homeless Shelter in Hawai'i

Daniel E. C. Boyce MS; Alan D. Tice MD; Fernando V. Ona MD; Kenneth T. Akinaka MRA; and Heather Lusk BS

Abstract

It is estimated that as many as 21,000 people in the state of Hawai'i may be infected with HCV. Most of those infected with viral hepatitis are unaware they are infected. Complications from viral hepatitis include liver cirrhosis and hepatocellular carcinoma. Hawai'i has the highest incidence of hepatocellular carcinoma in the United States. In 2003 there were over 6000 homeless and over 155,000 people at-risk of becoming homeless living in the state of Hawai'i. Risk factors for hepatitis, such as drug use, tattoos, sexual contact, and sharing of personal hygiene equipment are more prevalent in the homeless population.

To determine the incidence of hepatitis B and C among a population of homeless individuals, a health fair was held at a Honolulu area homeless shelter with approximately 200 residents. The incidence of hepatitis B and C was determined by anti-HCV and HBsAg blood tests. A survey was also conducted regarding risk factors and basic demographics.

Fifty-nine homeless adults volunteered for testing and took the survey. Thirty-one (52%) volunteers were born in Micronesia, twenty-four (41%) were born in the United States, two (3%) were born in Samoa, one (2%) was born in the Philippines, and one (2%) was born in the Marshall Islands. Forty adults were tested for Hepatitis C antibody, three of which tested positive. The primary risk factor among this group was jail time (100%), followed by illegal drug injection (67%), tattoos (67%), ear/body piercing (67%), snorting drugs (33%), blood transfusions (33%), and a sex partner with hepatitis (33%). Forty adults were also tested for HBsAg, One of which tested positive. This was a recent immigrant from Micronesia.

Homeless people in Hawai'i are more likely to have hepatitis B or C because risk factors are common among this population. Additionally, a large proportion of Hawai'i's homeless people come from the Pacific Islands, where the prevalence of hepatitis B is one of the highest in the world. In addition there are significant risks of hepatitis spread among the homeless and into the general population as many homeless do not realize they are infected. The health fair approach was an effective means for screening homeless people for hepatitis B and C. Our preliminary information suggests homeless shelters may be a good place for education, screening, and possibly interventions as well.

Background

Hepatitis C virus (HCV) infection is the most common chronic blood-borne viral infection in the United States, infecting at least 3.9 million (1.8%) of Americans. HCV accounts for almost half of all patients in the United States with chronic liver disease.¹ Of the 40,000 new patients infected with HCV each year, 85% develop chronic hepatitis, of which 20% develop cirrhosis, which can lead to hepatocellular carcinoma (HCC) or death.² It is estimated that as many as 21,000 people in the state of Hawai'i may be infected with HCV; with most being unaware they are infected.³ It is because of these infections that Hawai'i has the highest incidence of HCC in the United States.⁴ The primary source of HCV infection is drug abuse by injection and snorting, although transfusions were a significant risk prior to the use of screening tests for the virus in 1992.

HBV infection may be spread via vertical transmission to children from infected mothers, as well as through horizontal transmission via intravenous drug use and sexual contact. The incidence of ac-

tive HBV in Americans has fallen dramatically since an effective vaccine became available in 1982.⁵ There are approximately 1.25 million persons infected with HBV in the United States, but only 4,759 new infections were reported in 2006.⁶ Hawai'i is different, however, because of the large immigrant population. Vaccine programs have not been available in most Asian and Pacific Island countries. Viremia has been studied by the World Health Organization with a prevalence reputed as high as 12% in Micronesia, 4% in Guam, 10% in the Philippines, and 20% in Tonga.⁷ More than 4,000 people migrated to Hawai'i from outside the country in 2007, many of whom have not been vaccinated against viral hepatitis or lack knowledge of their HBV status.⁸

The homeless of Hawai'i are at particular risk for viral hepatitis due to their heritage and risk factors. The situation is compounded by this "silent epidemic" with infected people being asymptomatic for decades until their disease deteriorates into cirrhosis or erupts into carcinoma. Homeless populations lack adequate sources of health care and are less likely to seek treatment for conditions that are not acute illnesses such as with HCV.⁹ For these reasons hepatitis infections among the homeless population often go undetected or are not adequately treated. This population is often difficult to reach due to cultural and language barriers, as well as the economic barriers that limit access to health care. The homeless also pose a risk to the rest of society by acting as a reservoir for the viruses.

In 2003, more than 6,000 people in Hawai'i were thought to be homeless with over 155,000 at risk of becoming homeless. A high proportion of the homeless have a history of drug abuse, incarceration, as well as prostitution.¹⁰ Common tools of hygiene such as razors and toothbrushes may be unavailable or become a vehicle of transmission if shared. Hepatitis C virus has been found in up to one-third of tooth brushes¹¹ and 38% of razors used by those infected.¹²

An example of the problem can be drawn from the Micronesian population. One of the largest and fastest growing populations of homeless in Hawai'i comes from Micronesia, with over 8,000 migrants already residing in Hawai'i, and a migration rate that has increased 35% over the last six years.¹³ Many among this group become homeless because they lack family support, job skills, and English-language proficiency. Many Micronesians leave their homeland for increased medical resources, possibly resulting in a higher rate of disease among the migrant population than those living in Micronesia.

In order to better understand the problems and risks of hepatitis among the homeless individuals in Hawai'i, we undertook an investigation of the new Next Step homeless shelter in Oahu, which housed 200 adults and 90 children as of 2006.

Methods

We received approval from those responsible for the study and the human studies section of the University of Hawai'i Institutional Review Board. We then arranged a hepatitis Health Fair with speakers on hepatitis, music and free food on the evening of July 28, 2006.

People in the shelter were encouraged to be tested for hepatitis B and C using blood tests including assays for hepatitis C antibody and Hepatitis B surface antigen. T-shirts were offered for those who were tested. Those who volunteered were informed about the study and asked to fill out an approved survey form with demographic information and risk factors. The survey included questions regarding ethnicity, place of birth, history of prior hepatitis and HIV testing, vaccinations, risk factors for hepatitis B and C, family history of liver disease, and alcohol use. They were also provided information about available health care resources in the event that they tested positive for an infection. The blood collected was promptly delivered to a local laboratory for standard processing. Results were sent to the physician or clinic designated by the volunteer.

Information about those tested was collected and coded so that it could not be connected to the laboratory results with any significant personal identifiers. Results were tabulated and analyzed using standard methodology. Statistical significance was not determined due to the small number of people tested.

Results

Fifty-nine adults volunteered for testing and took the survey. Of those, 19 (32%) were men and 40 (68%) were women. Thirty-three (56%) designated themselves as Micronesian, eleven (19%) Hawaiian, Six (10%) Caucasian, three (5%) Japanese, two (3%) Filipino, two (3%) Samoans, one (2%) Marshallese and one (2%) African-American. Thirty-one (52%) volunteers were born in Micronesia, twenty-four (41%) were born in the United States, two (3%) were born in Samoa, one (2%) was born in the Philippines, and one (2%) was born in the Marshall Islands.

Forty participants were tested for hepatitis C antibody. Three (7%) of these were found to be positive, all of whom were born in the United States. A comparison between individuals who tested positive and negative for Hepatitis C is shown in Table 1. Among the three who tested positive, the following risk factors were noted: jail time (3), injection drug use (2), tattoos (2), ear/body piercing (2), snorted drugs (1), blood transfusion (1), and sex partner with hepatitis (1). None had a history of amphetamine use, alcohol use, or family members with hepatitis or liver disease. Two had no knowledge of having the infection, while one of the three had been told of hepatitis C previously.

Risk Factor	HCV Positive (3 people)	HCV Negative (37 people)
Average age	52	38
Gender	1 male, 2 female	16 male, 21 female
Injection drug use	67%	5%
Snorted drugs	33%	13%
Used "ice" or amphetamines	0%	9%
Blood transfusion	33%	13%
Needle stick	0%	3%
Tattoos	67%	40%
Ear/body piercing	67%	54%
Sex partner with hepatitis	33%	5%

Forty volunteers were tested for hepatitis B surface antigen. Only one of these tested positive. This was a 26-year-old woman who emigrated from Micronesia to Hawai'i the year prior and was unaware of her infection.

The survey also indicated that only one person was aware of being vaccinated for hepatitis A. Seven people reported vaccination against HBV. Of the three people with HCV, none reported vaccination against HAV and only one reported vaccination against HBV.

Discussion

Our limited study suggests the homeless people of Hawai'i are more likely to have viral hepatitis than the general population, as expected and reported by others. It also suggests the homeless are not aware of their infections or the relationship these infections have to risk factors. They also appear to be lacking in awareness of possible therapy for their infections as well as prevention of secondary infections through hepatitis vaccination. Interventions through health care programs designed for homeless shelters appear to offer a good opportunity to educate, test and offer treatment to stem the spread of these infections within and outside the homeless communities.

The number of inhabitants of the shelter who were tested and took the survey was encouraging. More than a quarter of the people who resided at the shelter volunteered for testing even though many regular residents were not present. The reasons others at the shelter did not participate in testing could not be determined. This study is limited by the small number of volunteers; however the findings suggest homeless shelters offer an opportunity for education, testing, and potential intervention with vaccination programs and possible treatment if indicated.

Further studies may be designed to document our findings, which are consistent with many other studies and unlikely to be false or not of concern. The "silent epidemic" of hepatitis B and C with the sequelae of liver cancer and cirrhosis can be reduced through funding for educational programs, testing, and interventions such as vaccines, safety kits, and treatments.

In conclusion, the homeless in Hawai'i appear to be at greater risk for having hepatitis B and C and are in need of interventions not only for the benefit of themselves but the rest of society. It is also clear the homeless are often not aware of their disease and lack awareness of the need for lifestyle changes such as abstinence from alcohol and drug abuse. They also lack understanding for the need for vaccination and the risks posed to others by sharing needles, snorting devices, razors, and even toothbrushes.

This paper is attributed to John A. Burns School of Medicine, University of Hawai'i. Support is attributed to the Hepatitis Support Network of Hawai'i.

Authors' Affiliation:
Infections Limited Hawai'i, Honolulu, HI 96813

Correspondence to:
Daniel Boyce
c/o Infections Limited Hawai'i
550 South Beretania St. 4th floor
Honolulu, HI 96813
Ph: (808) 203-4715
Email: dboyce@hawaii.edu

References

- Alter MJ, Kruszon-Moran D, Nainan OV, Quillan GM, Gao F, Moyer LA, Kaslow RA, Margolis HS. The Prevalence of Hepatitis C Virus Infection in the United States, 1988 Through 1994. *N Engl J Med*. 1999;341:556-562
- Kumar V, Abbas A, Fausto N. *Robbins and Coltran Pathologic Basis of Disease*. 7th ed. Philadelphia, PA: Elsevier Saunders; 2005:894.
- Hepatitis C in Hawaii A Strategic Plan for Action. STD/AIDS Prevention Branch Hawaii Department of Health. September 2003. Available at: <http://www.hawaii.gov/health/healthy-lifestyles/std-aids/pdfs/hep-strat-plan.pdf>. Accessed August 30, 2006.
- Davila JA, Petersena NJ, Nelson HA, El-Serag HB. Geographic variation within the United States in the incidence of hepatocellular carcinoma. *J Clin Epidemiol*. 2003 May;56(5):487-93.
- CDC. Achievements in Public Health: Hepatitis B Vaccination – United States, 1982–2002. *MMWR* 2002;51(25):549-552,563.
- CDC. Surveillance for Acute Viral Hepatitis – United States, 2006. *MMWR* 2008;57(SS-2)
- Hepatitis B Global Infection Rates Reviewed 2006. Available at: <http://www.pkids.org/pdf/phr/02-09globalhbv.pdf>. Accessed November 12, 2008.
- Estimates of the Components of Population Change for the United States, Regions, and States: July 1, 2006 to July 1, 2007*. Source: Population Division, U.S. Census Bureau, Release Date: December 27, 2007
- Gelberg L, Andersen R, Leake B. The Behavioral Model for Vulnerable Populations: Application to Medical Care Use and Outcomes for Homeless People. *Health Services Research*. 2000;34(6):1273-302.
- Nyamathi A, Dixon E, Robbins W. Risk Factors for Hepatitis C Virus Infection Among Homeless Adults. *J Gen Intern Med*. 2002 February; 17(2): 134–143.
- Lock G, Dirscherl M, Obermeier F, Gelbmann CM, Hellerbrand C, Knoll A, Scholmerich J, Jilg W. Hepatitis C - contamination of toothbrushes: myth or reality? *J Viral Hepat*. 2006 Sep;13(9):571-3.
- Tumminelli F, Marcellin P, Rizzo S, et al. Shaving as potential source of hepatitis C virus infection. *Lancet* 1995;345:658-658.
- Pobutsky AM, et al. Micronesian Migrants in Hawaii: Health Issues and Culturally Appropriate, Community-Based Solutions. *Californian Journal of Health Promotion* 2005;3(4):59-72.

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
June 2009					
6/19-6/20	OBG	The Queen's Medical Center	Halekulani, Honolulu	High Risk Obstetrics Conference	Tel: (808) 547-4406 Email: cme@queens.org Web: www.queensmedicalcenter.net
July 2009					
7/26-7/31	Multi	Kaiser Permanente	Grand Wailea Hotel Resort & Spa, Maui	17th Annual Update in Orthopaedics	Email: cmxtravel@cmxtravel.com Web: www.cmxtravel.com/kpor_2009/
7/31-8/1	Multi	The Queen's Medical Center	Hilton Hawaiian Village, Honolulu	Hawaiian Islands Trauma Symposium	Tel: (808) 537-7009 Email: cme@queens.org Web: www.queensmedicalcenter.net
October 2009					
10/20-10/24	Multi	American Society of Human Genetics	Hawai'i Convention Center, Honolulu	2009 Annual Meeting	Web: www.faseb.org/genetics/ashg
10/27-11/1	CHP	American Academy of Child and Adolescent Psychiatry	Hilton Hawaiian Village, Honolulu	56th Annual Meeting	Tel: (202) 966-2891
10/25-10/28	OBG	Central Association of Obstetricians & Gynecologists	Maui, Hawai'i	2009 Annual Meeting	Tel: (701) 838-8323
10/26-10/30	AN	California Society of Anesthesiologists	Grand Hyatt, Poipu Beach, Kaua'i	2009 CSA Fall Hawaiian Seminar	Web: www.csaqh.org
November 2009					
11/21	Multi	Hepatitis Support Network of Hawai'i	Queen's Conference Center	Viral Hepatitis in Hawai'i 2009	Tel: (808) 373-3488 Web: www.hepatitis.idlinks.com



An Evaluation Tool to Measure Cultural Competency in Graduate Medical Education

Maria B.J. Chun PhD; John Huh MD; Cynthia Hew MD; and Bradley Chun MD

Fellows, Office of Medical Education, John A. Burns School of Medicine, University of Hawai'i

Introduction

In response to the growing need for healthcare workers who are capable of working effectively with diverse patient populations, the need for cultural competency training has become imperative. There is no standardized definition of cultural competence, but one of the most commonly cited is by Cross et al., which states that: "Cultural Competence is a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals and enables that system, agency, or those professionals to work effectively in cross-cultural situations."¹ Cultural training has been mandated by the two main medical education accrediting bodies in the United States. The Liaison Committee on Medical Education (LCME) requires faculty and students to "demonstrate an understanding of the manner in which people of diverse cultures and belief systems perceive health and illness and respond to various symptoms, diseases, and treatments."² Additionally, the LCME requires medical students to take into consideration their own as well as others' biases when treating patients.

The Accreditation Council for Graduate Medical Education (ACGME) requires cultural competency under two of its six competencies.³ Under *Professionalism*, it requires "sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation." For *Interpersonal and Communication Skills*, residents must be trained to "communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds."

Both the LCME and the ACGME require institutions to provide evidence of the effectiveness of schools'/programs' cultural competency efforts. Currently, there is a lack of reliable and valid tools or measures that address specifically cultural competency in medical education and residency programs.⁴ The lack of an objective tool to establish the efficacy of interventions has been a weak point of cultural competency efforts in general. Several studies have provided extensive critiques of existing scales and/or research related to these scales in terms of their ability to truly assess cultural competence.⁵ ⁶ However, many of the widely used scales limit their focus on race and/or ethnicity.

A reliable and valid "preparedness to provide cross-cultural care survey" aka *Cross-Cultural Care Survey* has been developed by Weissman et al., and was distributed to a sample of residents in their last year of training.⁷ (The psychometric properties of the survey's scales will be presented in a paper currently undergoing revision – Personal Communication, Elyse Park, Ph.D., March 17, 2009). The *Cross-Cultural Care Survey* attempts to assess a resident's perception of how "prepared" and "skillful" he or she is with regard to the provision of high quality care to patients who are culturally

diverse/different from a culture of their own. The initial nationwide survey was comprised of 2,047 residents (internal medicine, surgery, pediatrics, obstetrics/gynecology, emergency medicine, psychiatry, and family medicine). The results revealed that most of the residents viewed a patient's culture as an important factor when providing care (moderately important=26%; very important=70%). There were variations among specialties. For example, surgical and emergency medicine residents were less likely to deem cultural issues as *very important* (43% and 47%, respectively), compared with other specialties, of which 67% to 94% felt it was *very important*.

Refining an Existing Cultural Competency Evaluation Tool

In an attempt to identify a reliable and valid tool to measure cultural competency efforts in JABSOM's residency programs, the *Cross Cultural Care Survey* was selected. Permission was obtained from one of the developers of the survey. In addition, institutional review board approvals (from the University of Hawai'i's Committee on Human Studies and the Queen's Research and Institutional Review Committee) were obtained. Unlike the original study, the survey was distributed to all residents; not just those in their final year of training. This was done to: 1) see if there would be any difference between program years and 2) track over time the impact of any cultural training interventions (by conducting a longitudinal assessment of a group of residents from when they first start to program completion).

In addition to the Department of Surgery where the study was initiated, the other residency programs were asked if they would be interested in participating. In Spring 2008, surveys were distributed to residents in surgery, psychiatry, family medicine, internal medicine, and geriatrics. For all but two of the specialties (surgery and family medicine), the response rate was low and/or there was a significant amount of missing data due to incomplete responses. After speaking with those who distributed the survey as well as some of the residents, the main reason cited was the length of time it took to complete the survey (approximately 20 minutes). Therefore, it was surmised that a shortened version may lessen the burden on the residents and increase the response rate.

It was also felt that as long as the most critical items/sections of the survey were kept intact, a shortened version would still allow for assessment of "preparedness" and "skillfulness". An amendment to the IRB approvals to shorten the survey and conduct a pilot test of this shorter version was obtained.

Members of the Office of Medical Education Fellowship Group (Maria Chun, John Huh, Cynthia Hew, Bradley Chun, and Jerry Allison) participated in the revision of the original survey with the

primary objective of minimizing the length of time to complete the survey. Consensus was reached on the most essential items of the survey that would measure preparedness and skillfulness. The original survey was comprised of the following sections: Training (self-report on cultural instruction received in residency); Preparedness (perception of “preparedness” to provide cross-cultural care); Cross-Cultural Experiences (self-report on diversity of patients treated, barriers and problems encountered, feeling of helplessness); Skillfulness (perception of “skillfulness” to provide cross-cultural care); Resources (self-report focused on language barrier issues); Specialty (self-report on preparedness to perform various medical tasks/procedures); Demographics. Having received some preliminary data regarding the reliability and validity of the “preparedness” and “skillfulness” scales on the original survey, agreement was made to keep those scales intact. After reviewing the existing literature related to the original survey and discussing the sections and items, the shorter version was piloted in Spring 2009. Initial feedback from the residents is that it takes about 5-10 minutes to complete this shortened survey.

Plans for the Future of Evaluating Cultural Competency

Data collection continues, and plans are to publish the results and share the findings with the developers of the original survey who have been notified of the development of a shorter version. Their expert opinion will be obtained and the survey will continue to be revised and refined so that it can be used to assess the impact of any cultural training during residency. Additionally, it is hoped that the survey can be amended for use with medical students, practicing physicians, and other healthcare workers/providers.

Acknowledgements

The authors would like to thank Jerry Allison MD for his input on the survey revisions. Maria Chun would like to thank Danny Takanishi, Jr., MD for allowing her to participate in the OME Fellowship and for supporting her educational and research endeavors.

References

1. U.S. Department of Health & Human Services, Health Resources and Services Administration, Bureau of Health Professions. Other Definitions of Cultural Competence. Available at: <http://bhpr.hrsa.gov/diversity/cultcomp.htm>. Accessed April 14, 2009.
2. Liaison Committee on Medical Education. Functions and Structure of a Medical School. Standards for Accreditation of Medical Education Programs Leading to the M.D. Degree. June 2008. Available at: <http://www.lcme.org/functions2008jun.pdf> Accessed March 18, 2009.
3. Accreditation Council for Graduate Medical Education. Common Program Requirements: General Competencies. Available at: http://acgme.org/acWebsite/dutyhours/dh_dutyhoursCommonPR07012007.pdf Accessed June 10, 2008.
4. Chun MJB, Takanishi DMJ. The need for a standardized evaluation method to assess efficacy of cultural competence initiatives in medical education and residency programs. *Hawaii Med J.* 2009; 68(1): 2-6.
5. Price EG, Beach MS, Gary TL, Robinson K, Gozu A, Palacio A, Smarth C, Jenckes M, Feuerstein C, Bass EG, Powe NR, Cooper LA. A systematic review of the methodological rigor of studies evaluating cultural competence training of health professionals. *Acad Med.* 2005; 80(6): 578-586.
6. Kumas-Tan Z, Beagan B, Loppie C, MacLeod A, Frank B. Measures of cultural competence: examining hidden assumptions. *Acad Med.* 2007; 82(6): 548-557.
7. Weissman JS, Betancourt JR, Campbell EG, Park ER, Kim M, Clarridge B, Blumenthal D, Lee K C, Maina AW. Resident physicians' preparedness to provide cross-cultural care. *JAMA.* 2005; 294: 1058-1067.



Classified Notices

To place a classified ad, please contact Drake Chinen at drakechinen@gmail.com

MEDICINE PRACTICE AVAILABLE

QUEEN'S PHYSICIANS' OFFICE BUILDING I — Established Internal Medicine practice available, fully equipped and staffed. Phone: (808) 531-7551.



❖ A TICK SKIT. A TASK KIT. A LYME AND QUANDARY BASKET.

In 2006 the Infectious Diseases Society of America (IDSA) developed a set of guidelines for Lyme Disease, which characterize the condition as an acute infection, and recommend treatment with a few weeks of antibiotics. The guidelines are essentially in agreement with the Centers for Diseases Control and Prevention (CDC). The problem is that a sizable number of patients believe that Lyme disease can become chronic or produce a post-Lyme syndrome, frequently even with no tick bite history. There are complaints of persistent and severe joint pain and fever, and that the syndrome requires long term treatment with medication. The Connecticut Attorney General has been pursuing an antitrust investigation and claims his office has uncovered "serious flaws in the IDSA process," and "undisclosed financial interests held by several of the most powerful IDSA panelists." The panelists have denied that they received any financial benefit from the guidelines, and no complaint has been filed. Still, the investigation has cast a poisonous shadow over therapy for Lyme disease, and some doctors don't want to see Lyme patients. In an attempt to clear the air, IDSA will convene a new eight to 12-member independent review panel made up solely of physicians and scientists to determine the medical and scientific validity of the 2006 guidelines. To date no Lyme ticks have been found in Hawai'i.

❖ A BRIGHT EYE INDICATES CURIOSITY; A BLACK EYE TOO MUCH.

A multi-center clinical trial is underway in the United States to study the benefits of a revolutionary treatment for keratoconus called collagen cross-linking or CXL. The potential is huge for the refractive surgery market, and there are other possible applications including treating infectious corneal ulcers, corneal melts and corneal edema. In 2003, German investigators found that they could stop the progression of the cone-shaped thinning of the cornea through the interaction of riboflavin and ultraviolet light (UVA). The treatment is now in use in every major nation except the United States, and it is anticipated that the Food and Drug Administration will soon get on board. The process involves removing the corneal epithelium, applying 0.1% riboflavin and illumination with UVA for 30 minutes. The outcome is cross-linking with corneal collagen which stiffens the cornea and stops the progression of keratoconus and corneal ectasia after refractive surgery.

❖ A FINE IS A TAX FOR DOING WRONG. A TAX IS A FINE FOR DOING WELL.

Anti-sin taxes (alcohol, tobacco, gambling) have always been popular with politicians, but a proposal in the Oregon legislature goes far beyond the predictable. House bill 2641 would increase the tax on beer by 1,900% moving the tax per barrel from \$2.60 to an outrageous \$52.21. Oregon is the second largest micro-brewery producer in the United States, and its 96 breweries already provide over 5,000 jobs and \$2.25 billion to the Oregon gross domestic product. Proponents of the measure point out that Oregon is 49th in the nation in malt beverage tax, and the law has not changed in 32 years although attempts have been made biennially and have always been defeated. Stephanie Pump (not related to the Town Pump) of the Governor's Council on Alcohol and Drug Abuse states that the measure is one of the most logical steps to be taken to stabilize addiction and recovery services. If passed the law will also drive brewers out of Oregon, cost the loss of many jobs, and encourage beer drinkers to cross the Columbia river and do their shopping in Washington.

❖ NOTHING IS EVER AS SIMPLE AS IT FIRST SEEMS TO BE.

When the going gets tough, the tough – give up their ova. A healthy young woman with high college SATs may be able to sell her eggs for up to \$50,000, although the American Society of Reproductive Medicine states compensation above \$10,000 is not appropriate. Some agencies advertise that certain specific characteristics may provide a much greater financial reward. A history of hepatitis, diabetes, cancer, or sexually transmitted disease are automatic eliminators, and a comprehensive test of psychological and genetic factors must be included. Moreover, several weeks of hormone injections to synchronize the donor menstrual cycle with the recipient is part of the routine before the vaginal wall approach to harvest the cell(s). Donors must also refrain from smoking, drinking and sex. Once informed, many opt out. Still, college loans, credit card and mortgage debt, savings exhaustion, and other economic pressures have applicants lining up, and in some instances husbands are offering their wives.

❖ TOO MUCH WINE INJURES A MAN INTERNALLY, EXTERNALLY AND ETERNALLY.

Unlike other countries France has two drinking ages. Wine and beer can be purchased at age 16 and hard liquor at age 18. No matter what the customers age, bartenders and shopkeepers rarely ask for ID when they sell, uncork or pour. The government of President Nicolas Sarkozy wants to reduce the damage of addiction among young people, and has proposed to raise the age for wine consumption to 18 years. While the powerful winemakers lobby does not intend to obstruct the law, they believe the government is making a mistake. They believe that the new law will encourage binge drinking, a habit imported from the United States where the legal age is 21. The French have an age-old custom of teaching their children to taste and appreciate wine with family meals and that is unlikely to change irrespective of a legal change in age limit.

❖ A SCHOOL BOARD CAN MAKE A DECISION THAT IS DUMBER THAN ANY OF ITS MEMBERS

Six years ago in Arizona a 13-year-old girl, an honor student with no history of disciplinary problems, was accused by a classmate of providing prescription-strength ibuprofen pills. She denied the allegation, but was taken to the principal's office. The school, which has a no-tolerance policy for both prescription and over the counter drug use without permission, subjected the girl to a strip search down to panties and bra conducted by a nurse and assistant, both women. No drugs were found. The student was humiliated and traumatized by the experience. The American Civil Liberties Union representing the student, claims that older students deserve the same constitutional rights as adults, but the educators argue that a ruling against them would jeopardize campus safety. The initial ruling by a federal magistrate and three person panel supported the school policy, but the US Circuit Court of Appeals overruled that body, and now the issue has percolated to the United States Supreme Court. Zero tolerance doesn't mean zero common sense.

❖ HEY, FTC! I CAN TELL YOU WHERE TO PUT YOUR RED FLAG.

The American corpus medicinensis is already buried under commissions, agencies, regulations, investigators, accountants, lawyers, bureaucrats of all colors, et cetera – ad nauseam, not to mention the screw-you-over insurance carriers. The latest planned abuse is making practicing physicians policemen for the Federal Trade Commission. By May 1, 2009, practicing physicians must implement a formal identity theft program under the FTC's "red flag" policy. These flags are meant to be for financial and banking institutions for preventing identity theft and not for doctors struggling to survive in a whirlpool of crapola. Apparently lawyers for the megalith can interpret rules and regulations any way they wish. Failure to comply could mean administrative penalties or up to \$2,500 in fines per violation. It is time for the American Medical Association to say NO, NO, NO! To apply this red flag baloney to physicians' practices is stupid, unenforceable and abusive.

❖ MOST MODERN TOYS ARE EDUCATIONAL, SOMETIMES MORE THAN SEEMS NECESSARY.

Toy retailers reported that one of the biggest sellers of 2008 was an animatronic "Baby Alive Learns to Potty." The doll comes complete with special "green beans" and "bananas" packets that when fed to the doll come out the other end as simulated feces. The doll then says, "Oh, I made a stinky." Geez! One can't help but wonder where Hasbro will go next with their true-to-life biologic representation.

ADDENDA

❖ A federal arbitrator ruled in March that an employer had for years willfully violated the Fair Labor Standards Act exploiting its employees by failing to pay overtime. The guilty employer: The US Equal Employment Opportunity Commission.

❖ A "Stop the Violence" concert was held at Silver Springs, Maryland. A brawl broke out and 16 people were arrested.

❖ In Ft. Pierce, Fla., a woman called 911 three times to report that her local McDonald's was out of chicken McNuggets.

❖ In Vilas County, Wis., the district attorney's office is looking for a woman about 5 foot 8 inches, 140 lbs who is willing to stick her head into a toilet to validate a homicide theory.

❖ Half of the large bowel is a semi-colon.

ALOHA AND KEEP THE FAITH — rts■

Editorial comment is strictly that of the writer.

Over 50 Years of...

...Dedication to Hawaii's Physicians!

The Board of Directors at Physicians Exchange of Honolulu invite you to experience the only service designed by and for Physicians in Hawaii.

President: Stephen Kemble M.D.

Vice President: Garret Yoshimi

Secretary: Paul DeMare M.D.

Treasurer: Richard Philpott ESQ.

Directors: Linda Chiu M.D.

Robert Marvit M.D.

Vince Yamashiroya M.D.

Ann Barbara Yee M.D.

David Young M.D.

Manager: Rose Hamura

- **Professional 24 Hour Live Answering Service**
- **Relaying of Text Messages to Pagers and Cell Phones**
- **All Calls Confirmed, Documented and Stored for 7 Years**
- **HIPAA Compliant**
- **Affordable Rates**
- **Paperless Messaging**
- **Receptionist Services**
- **Subsidiary of Honolulu County Medical Society**
- **Discount for Hawaii Medical Association members**

Discover the difference of a professional answering service. Call today for more information.

Physicians Exchange of Honolulu, Inc.
1360 S. Beretania Street, #301
Honolulu, HI 96814

524-2575



Stephen Kemble MD
President



Garret Yoshimi
Vice-President



Paul DeMare MD
Secretary



Richard Philpott ESQ
Treasurer (not pictured)



Linda Chiu MD
Director



Robert Marvit MD
Director



Vince Yamashiroya MD
Director



Ann Barbara Yee MD
Director



David Young MD
Director (not pictured)



Rose Hamura
Manager