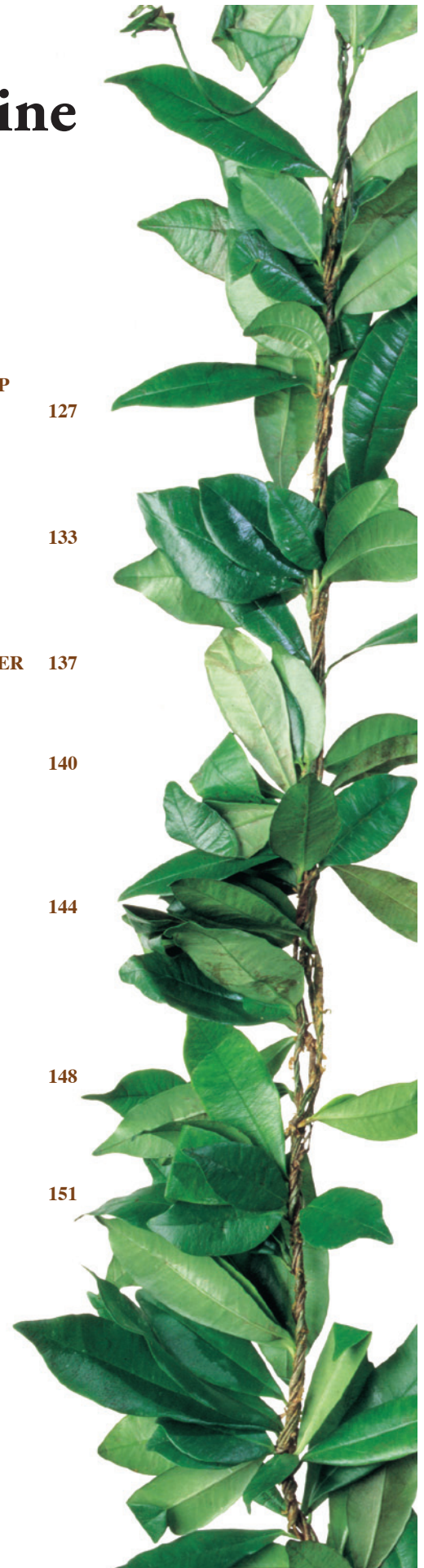


# Hawai‘i Journal of Medicine & Public Health

A Journal of Asia Pacific Medicine & Public Health

May 2016, Volume 75, No. 5, ISSN 2165-8218

<b>SELF-DEBRIEFING VS INSTRUCTOR DEBRIEFING IN A PRE-INTERNSHIP SIMULATION CURRICULUM: NIGHT ON CALL</b>	<b>127</b>
Sayaka Oikawa MD; Benjamin Berg MD; Joseph Turban MD; Dale Vincent MD; Yasuhiro Mandai MD; and Deborah Birkmire-Peters PhD	
<b>CEREBRAL VENOUS AIR EMBOLISM SECONDARY TO MESENTERIC INFARCTION</b>	<b>133</b>
Ittikorn Spanuchart MD; Aileen Tamura MD; Brent Matsuda MD; Qi Jie Nicholas Leo MBBS; and Hiro Sung MD	
<b>HEALTH DISPARITIES IN NATIVE HAWAIIANS AND OTHER PACIFIC ISLANDERS FOLLOWING HYSTERECTOMY FOR ENDOMETRIAL CANCER</b>	<b>137</b>
Keith Terada MD; Michael Carney MD; Robert Kim MD; Hyeong Jun Ahn PhD; and Jill Miyamura PhD	
<b>MEDICAL SCHOOL HOTLINE</b>	<b>140</b>
<b>Liaison Committee for Medical Education Accreditation, Part VI: Academic, Career, Personal Counseling/Student Health and Well-Being</b>	
Richard W. Smerz, DO, PhD, MTM&H, FACPM; Sheri F.T. Fong MD, PhD; and Damon H. Sakai MD	
<b>INSIGHTS IN PUBLIC HEALTH</b>	<b>144</b>
<b>Safe Messaging for Youth-Led Suicide Prevention Awareness: Examples from Hawai‘i</b>	
Jane J. Chung-Do DrPH; Deborah A. Goebert DrPH; Kris Bifulco MPH; Jeanelle Sugimoto-Matsuda DrPH; JoAnne Balberde-Kamali‘i MSW; Dane Ka‘ae BA; Leslie Lau Hee; and Larry Walter MA, M.Div.	
<b>THE DANIEL K. INOUE COLLEGE OF PHARMACY SCRIPTS</b>	<b>148</b>
<b>Transition from Traditional to Western Medicine in Hawai‘i (Part 2)</b>	
<b>Western Legislative Impacts on Traditional Medical Practices</b>	
Helen Wong Smith MLIS, CA	
<b>THE WEATHERVANE</b>	<b>151</b>
Russell T. Stodd MD	



# Hawai'i Journal of Medicine & Public Health

A Journal of Asia Pacific Medicine & Public Health

ISSN 2165-8218 (Print), ISSN 2165-8242 (Online)

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.

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

Hawai'i Journal of Medicine & Public Health  
677 Ala Moana Blvd., Suite 1016B  
Honolulu, Hawai'i 96813  
<http://www.hjmph.org>; Email: [info@hjmph.org](mailto:info@hjmph.org)

The Hawai'i Journal of Medicine & Public Health was formerly two separate journals: The Hawai'i Medical Journal and the Hawai'i Journal of Public Health. The Hawai'i Medical Journal was founded in 1941 by the Hawai'i Medical Association (HMA), which was incorporated in 1856 under the Hawaiian monarchy. In 2009 the journal was transferred by HMA to University Clinical, Education & Research Associates (UCERA). The Hawai'i Journal of Public Health was a collaborative effort between the Hawai'i State Department of Health and the Office of Public Health Studies at the John A. Burns School of Medicine established in 2008.

## Editors:

S. Kalani Brady MD, MPH  
Michael J. Meagher MD

## Editor Emeritus:

Norman Goldstein MD

## Associate Editors:

Ranjani R. Starr MPH  
Lance K. Ching PhD, MPH

## Copy Editor:

Alfred D. Morris MD

## Contributing Editors:

Donald Hayes MD, MPH  
Satoru Izutsu PhD  
Carolyn Ma PharmD  
Tetine L. Sentell PhD  
Russell T. Stodd MD  
Carl-Wilhelm Vogel MD, PhD

## Layout Editor & Production Manager:

Drake Chinen

## Subscription Manager:

Meagan Calogeras

## Editorial Board:

Benjamin W. Berg MD, Patricia Lanoie Blanchette MD,  
S. Kalani Brady MD, John Breinich MLS,  
Lance K. Ching PhD, John J. Chen PhD,  
Donald Hayes MD, Satoru Izutsu PhD,  
Kawika Liu MD, Tonya Lowery St. John PhD,  
Carolyn Ma PharmD, Michael J. Meagher MD,  
Alfred D. Morris MD, Tetine L. Sentell PhD,  
Myron E. Shirasu MD, Ranjani R. Starr MPH,  
Russell T. Stodd MD, Frank L. Tabrah MD,  
Carl-Wilhelm Vogel MD

## Statistical Consulting:

Biostatistics & Data Management Core,  
John A. Burns School of Medicine,  
University of Hawai'i (<http://biostat.jabsom.hawaii.edu>)

## Advertising Representative

Roth Communications  
2040 Alewa Drive, Honolulu, HI 96817  
Phone (808) 595-4124

The Hawai'i Journal of Medicine & Public Health (ISSN 2165-8218) is a monthly peer-reviewed journal published by University Clinical, Education & Research Associates (UCERA). 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. Print subscriptions are available for an annual fee of \$220; single copy \$20 includes postage; contact the Hawai'i Journal of Medicine & Public Health for foreign subscriptions. Full text articles available on PubMed Central. ©Copyright 2016 by University Clinical, Education & Research Associates (UCERA).



Laka (D. Varez)

## Over 50 Years of Dedication to Hawai'i's Physicians

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

### President:

David Young, M.D.

### Vice President:

Vince Yamashiroya, M.D.

### Secretary:

Kimberly Koide Iwao, Esq.

### Treasurer:

Richard Philpott, Esq.

### Directors:

Cynthia Goto, M.D.

Melvin Inamasu, M.D.

Robert Marvit, M.D.

Stephen Oishi, M.D.

Garret T. Yoshimi

### Executive Director:

Rose Hamura

- Professional 24 Hour Live Answering Service
- Relaying of secured messages to cell phones
- Calls Confirmed, Documented and Stored for 7 Years
- HIPAA Compliant
- Affordable Rates
- Paperless Messaging
- Receptionist Services
- Subsidiary of Honolulu County Medical Society
- Discount for Hawai'i 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

**(808) 524-2575**



# Self-Debriefing vs Instructor Debriefing in a Pre-Internship Simulation Curriculum: Night on Call

Sayaka Oikawa MD; Benjamin Berg MD; Joseph Turban MD; Dale Vincent MD; Yasuhiro Mandai MD; and Deborah Birkmire-Peters PhD

## Abstract

This study sought to determine if learner self-performance assessment (SPA) and team-performance assessment (TPA) were different when simulation based education (SBE) was supported by self-debriefing (S-DB), compared to traditional facilitator-led debriefing (F-DB). "One-Night-On-Call," an internship preparation curriculum, was selected to provide SBE. Participants worked as team members in 4 sequential bedside acute care problem-solving scenarios. Fifty-seven learners were randomized to 9 F-DB and 10 S-DB Teams. Participants completed SPA and TPA assessment checklist questionnaires immediately following the first and fourth (final) scenarios. Learner SPA and TPA scores improved overall from the first to the fourth scenarios ( $P < .05$ ). F-DB versus S-DB cohorts did not differ in overall SPA scores. The F-DB average TPA score was 12.8 ( $SD \pm 2.1$ ) compared to a S-DB score of 14.1 ( $SD \pm 2.1$ ) ( $P = .001$ ). F-DB participants' increase in TPA was due to increases in the Patient Assessment and Treatment sub-domains that exceeded corresponding improvements in the S-DB cohort. Self-debriefing strategies are equivalent to facilitator-led debriefing in some situations. Self-debriefing offers opportunities to enable simulation-based education by decreasing the number of required faculty debriefers, and may be uniquely well matched to simulation-based teamwork training.

## Keywords/MESH terms

self-debriefing, patient simulation, teaching methods, problem based learning, teamwork, assessment, evaluation

## Introduction

Simulation-based education (SBE) is an experiential learning format increasingly utilized in professional healthcare education.<sup>1</sup> SBE encompasses a variety of approaches and technologies, including scenario-based simulation utilizing computer controlled high technology mannequins programmed to represent the physiology and anatomy of clinical problems. Other SBE techniques include technology-augmented training using partial body trainers to facilitate specific skill training (eg, airway intubation, lumbar puncture), computer based simulation, and virtual reality methods. Rigorous application of instructional design processes for SBE is required for optimal educational outcomes. Instructional design elements include curriculum development, scenario design, scenario facilitation methods, assessment strategies, feedback, and debriefing. Debriefing is an interactive feedback process in which learners review simulation experiences in a structured format, immediately following participation in scenario-based simulation. Debriefing serves to close gaps between faculty and participant perceptions of performance, and to enable learning through reflection.<sup>2</sup> Debriefing is a format for feedback. Post-simulation debriefing with review of learner actions and performance during simulation is a crucial component of experiential learning processes such as SBE.<sup>1-5</sup>

Debriefing techniques include facilitator-led debriefing, with or without video review; group and individualized techniques; written exercises; in-simulation debriefing; after-simulation debriefing; and others.<sup>2,6,7</sup> The debriefing process is most commonly guided by a facilitator, who provides immediate post simulation formative feedback, enabling self-reflection focused on established learning objectives. Studies indicate that groups of learners who receive such feedback have higher post-test performance scores.<sup>8</sup>

Interactive debriefing techniques are supported by theories of adult learning. Debriefing with facilitation by a content expert is considered critical for the process of experiential learning.<sup>1,4,9</sup> The debriefer guides a structured deliberate debriefing process to reach established debriefing objectives.<sup>1,2,10</sup> A crucial skill required for effective debriefing is structured critical observation of learner behaviors and actions during simulation, while simultaneously assessing knowledge, skills, and attitudes. Optimal individualized or small group debriefing is conducted with low facilitator/debriefer to learner ratios. Availability of trained debriefers is a common barrier to use of SBE, due to time and cost constraints.<sup>11,12</sup>

Self-debriefing concepts have been considered a method to decrease barriers to use of SBE and as a novel method of learning with SBE systems.<sup>2,13,14</sup> However, it remains uncertain whether participants debriefed by self or by a peer accomplish equivalent learning outcomes compared to facilitated formative debriefing.<sup>15</sup> One systematic review indicates that physicians

Abbreviations	Meaning
SPA	Self-performance assessment
TPA	Team performance assessment
S-DB	Checklist enabled self debriefing
F-DB	Facilitator led debriefing
SBE	Simulation-based education
GRS	Global rating scales
NOC	One Night on Call
COPD	Chronic Obstructive Pulmonary Disease
PGY	Post-graduate year
ANOVA	Analysis of variance
SPSS	Statistical Package for the Social Sciences
F-test	Statistical test in which the test statistic has an F-distribution under the null hypothesis.

have a limited ability to accurately self-assess, and meta analyses reveal that self-assessment correlates poorly with expert assessment.<sup>16-18</sup> Evaluation of self-debriefing is a Society of Simulation in Healthcare SBE research priority.<sup>19</sup>

Formative debriefing emphasizes identification of gaps between actual performance and required performance standards, for the purpose of learning.<sup>20, 21</sup> “Self” or “instructor-less” checklist guided formative debriefing can improve the efficiency of simulation-based instruction and has been shown to be effective for training of nontechnical skills, such as team work and crisis resource management.<sup>20</sup> Little is known about learner self-assessment and/or self-efficacy following formative self-debriefing versus instructor-led debriefing.

Simulation-based learning commonly employs scoring with checklists and rating scales to inform and guide feedback. Commonly used instruments include global rating scales (GRS), time-to-event assessments, and critical event checklists. Feedback with debriefing is typically guided by experienced expert facilitators who incorporate scoring instruments. Checklist-guided self-debriefing enables participants to engage in formative self-debriefing guided by objective performance benchmarks.

We sought to determine if self-performance assessment (SPA) and team-performance assessment (TPA) by participants was different when simulation based education was supported by self-debriefing compared to traditional facilitator led debriefing. Participant self-reported SPA and TPA were compared following simulation based training for learners randomized to either “checklist enabled self-debriefing” or “traditional instructor led-debriefing” groups. The instructional content was composed of “One-Night-On-Call” (NOC), a published Post Graduate Year 1 (PGY1)/Pre-internship curriculum, which had been completed by over 250 students in the four years preceding this report.<sup>22</sup> NOC is designed to challenge new post graduate year 1 (PGY1) physician interns with simulated common clinical problem solving experiences which they are likely to encounter during the first month of internship. NOC educational objectives include components of both inter-professional teamwork and clinical problem solving.

## Methods

This prospective, controlled, educational cohort intervention study was conducted in June and July 2011. The study was approved by the University of Hawai‘i Committee on Human Subjects (IRB/CHS). The setting was the SimTiki Simulation Center, University of Hawai‘i, John A Burns School of Medicine. NOC training was conducted for PGY1 interns during required internship orientation. Participants completed NOC once during the interval beginning 6 weeks prior to internship, ending no later than the end of their first PGY1 month. Individuals were assigned to a single day of training based on residency program scheduling and availability. On each training day 3-4 groups completed scenarios according to a rotating non-overlapping schedule. NOC curriculum is conducted over four hours and is comprised of four sequential simulated case management

scenarios and debriefing. Each case management exercise was limited to 5 minutes. Each scenario was immediately followed by 15-20 minutes of debriefing, designed to facilitate reflection and reinforce pre-determined learning objectives. During each scenario learners worked as a team of 2-4 members to actively assess and treat a simulated patient. For each of four common in-hospital clinical scenarios, a team of 2-4 learners were summoned to assist in clinical care by a bedside nurse, whose role was played by the primary scenario facilitator. Simulated clinical scenarios were anaphylactic shock, stable atrial fibrillation, chronic obstructive pulmonary disease (COPD) exacerbation, and acute coronary syndrome (ACS). Each team of 2-4 learners experienced scenarios in the same sequence. Scenarios were conducted using the Laerdal SimMan® computer controlled human patient simulator (Laerdal USA, Wappingers Falls, NY, USA), with standardized programmed clinical case details. Standardized orientation to the simulator, environment, equipment, and simulation rules of engagement was conducted for learners prior to participation in scenarios.

Each scenario had specified learning objectives and was designed to last no more than 5 minutes. A trained faculty facilitator played the role of the primary bedside nurse. Facilitators were physicians with simulation based teaching experience who specialized in critical care medicine, anesthesiology, emergency medicine, and internal medicine. Facilitators received scenario orientation and facilitator training including mock facilitation sessions.

Participants were randomized to one of several teams. Roles for each scenario were assigned by team consensus; teams were instructed to distribute roles such that by the end of four scenarios each student had the opportunity to play each role on at least one occasion: nurse(s), primary intern, or assisting intern(s). Participants were aware that they were participating in an IRB approved research study, but were unaware of the objectives and content of the study. Teams were assigned on alternating instructional days to either post-simulation facilitator led debriefing (F-DB) or self-debriefing (S-DB) for all scenarios. F-DB or S-DB was conducted immediately following each of the four scenarios. F-DB teams included surgery, orthopedic surgery, internal medicine, transitional, and family medicine PGY1 physicians. S-DB teams included transitional, family medicine, pediatrics, OB/GYN, and psychiatry PGY1 physicians. F-DB groups participated in a traditional facilitator-led bedside debriefing process immediately following each scenario. Facilitators conducted detailed bedside debriefing using a scenario-specific checklist as a debriefing guide. S-DB groups participated in a debriefing process in which participants were instructed to individually and independently complete a scenario specific checklist, followed by participant group discussion using the scenario-specific checklist as a discussion guide. Facilitators did not participate in the S-DB group discussion. Identical scenario-specific checklists with three categories, varying only in content of the “treatment” category for each case (Figure 1) were utilized by both faculty for F-DB, and participants for S-DB. Time for F-DB and S-DB did not exceed 15 minutes.

	Case 1	Case 2	Case 3	Case 4
<b>Assessment</b>	<input type="checkbox"/> Asks patient about symptoms <input type="checkbox"/> Checks airway <input type="checkbox"/> Assesses breath sounds <input type="checkbox"/> Checks pulse <input type="checkbox"/> Checks ECG monitor <input type="checkbox"/> Reviews chart <input type="checkbox"/> Re-evaluates patient <input type="checkbox"/> States diagnosis			
<b>Treatment</b>	<input type="checkbox"/> Applies oxygen <input type="checkbox"/> Discontinues IV <input type="checkbox"/> Epinephrine <input type="checkbox"/> Inhaled bronchodilator	<input type="checkbox"/> Applies oxygen <input type="checkbox"/> Attaches defibrillator <input type="checkbox"/> Starts IV <input type="checkbox"/> Does NOT shock	<input type="checkbox"/> Applies oxygen <input type="checkbox"/> Beta agonist <input type="checkbox"/> Considers steroids <input type="checkbox"/> Low flow oxygen noted	<input type="checkbox"/> Applies oxygen <input type="checkbox"/> 12-lead EKG <input type="checkbox"/> Start IV <input type="checkbox"/> Morphine & nitrates
<b>Teamwork</b>	<input type="checkbox"/> Closed loop communication used <input type="checkbox"/> Leader gave clear orders - by name <input type="checkbox"/> Task delegation was used <input type="checkbox"/> Available resources were used <input type="checkbox"/> Team members took responsibility <input type="checkbox"/> Call for help was made			
Figure 1. Scenario Checklist				

Following completion of four sequential simulation exercises and debriefings, participants from all teams on each day of training attended an instructor-guided interactive course group wrap-up session, intended to review the main teaching objectives and encourage group reflection and discussion.

Primary outcome data was gathered from participants who completed both a Team Performance Assessment (TPA) GRS and a Self-Performance Assessment (SPA) GRS on two occasions during the NOC program. Baseline assessments were completed immediately following the first scenario before debriefing for that scenario, and again following scenario 4 before debriefing for that scenario. Both TPA and SPA were scored from 3-18 total points, in three content domains from low (“Unsatisfactory”) to high (“Superior”). Domains were weighted by uneven allocation of the maximum total point score for each domain: Patient assessment (1-8 points), Teamwork (1-6 points) and Patient treatment (1-4 points). Pre-debriefing GRS scores of the first case comprised baseline data for all participants. Post-debriefing GRS data from the last case was collected for between group F-DB and S-DB comparison of differences from baseline.

### Statistical Methods

The primary analysis was designed to detect differences in the student rated TPA and SPA GRS scores between two debriefing cohorts, F-DB and S-DB. Baseline and post debriefing TPA and SPA GRS scores were analyzed with a two-way, mixed-design analysis of variance (ANOVA) using SPSS, version 19.0 (Armonk, NY: IBM Corp.). The average specific agreement for all combinations of paired facilitator total GRS scores was measured using the F- test.

### Results

Sixty PGY1 residents were randomly assigned to 20 clinical teams, each with 2-4 participants. Each team completed four

scenarios in the same sequence. SPA and TPA GRS scores were analyzed for 57 students (19 teams). One S-DB team was excluded from analysis because of missing data. The F-DB control group comprised 27 individuals (9 teams) and the S-DB intervention group comprised 30 individuals (10 teams). There was no difference detected between facilitator total GRS scores.

TPA and SPA scores completed by learners in facilitator-led debriefing and self-debriefing groups are reported in Table 1. Overall post-course SPA and TPA scores improved compared to pre-course scores ( $P=.014$  for SPA and  $.013$  for TPA). TPA scores were higher for the SDB group than the FDB group, whereas no significant difference was found in SPA scores between the SDB and FDB groups. The debriefing method (F-DB vs S-DB) showed no interaction between pre- and post-course assessment of the Self Performance Assessment ( $P=.50$ ).

Table 2 shows results stratified by the three domains of the GRS self-assessment. Significant differences were observed between pre- and post-course TPA scores (Table 2). F-DB groups had higher baseline and post course scores compared to S-DB groups in the Patient Assessment ( $P<.05$ ) and Patient Treatment ( $P=.001$ ) domains. There were no differences between F-DB and S-DB groups in the Teamwork domain ( $P=.059$ ).

### Discussion

Debriefing is a critical component of experiential learning through guided reflection.<sup>1,2,23</sup> Our results show that formative checklist-guided self-debriefing is associated with higher overall self-reported team-performance compared to traditional facilitator-led formative debriefing. Checklist-guided, formative self-debriefing yields self-performance assessment which is equivalent to that of learners who underwent traditional facilitator led debriefing.

These results illuminate several learner outcomes which may be causally related to a specific debriefing method. In our study all participants were at an equivalent post graduate training level

Table 1. Pre-Post Course Results. Self- (SPA) /Team- (TPA) Performance Assessment. Mean Score (SD)			
Group	Pre-course	Post-course	P-value (2-Way Mixed ANOVA)
Overall (n=57)	<b>SPA Score</b>		
	11.6 (2.3)	12.6 (1.2)	.014 F(1,110) = 6.28
	<b>TPA Score</b>		
	13.0 (2.3)	14.0 (1.9)	.013 F(1,110) = 6.33
<b>SPA Score</b>			
F-DB (n=27)	11.2 (2.6)	12.1 (1.9)	.050† F(1,110) = 3.93
S-DB (n=30)	12.5 (2.1)	13.0 (2.0)	
<b>TPA Score</b>			
F-DB (n=27)	12.3 (2.3)	13.3 (1.8)	.001†† F(1,110) = 11.50
S-DB (n=30)	13.6 (2.3)	14.5 (1.8)	

†No difference between or within F-DB/S-DB groups for either pre- or post- course scores.

††S-DB TPA score significantly higher than F-DB.

F-DB, facilitator led debriefing; SD, standard deviation; S-DB, self-debriefing; SPA, self-performance assessment; TPA, team-performance assessment.

Table 2. Team Performance sub-domain category scores. (Mean ± SD)				
Group	GRS category	Pre-course	Post-course	P-value ANOVA
S-DB	Patient Assessment (0-8 scale)	5.1 ± 1.2	5.7 ± 1.00	<.05 F (1,110) =13.58
F-DB		5.8 ± 1.3	6.4 ± 0.9	
S-DB	Patient Treatment (0-4 scale)	2.7 ± 0.5	2.9 ± 0.5	.001 F (1,110)=12.4
F-DB		3.1 ± 0.6	3.3 ± 0.5	
S-DB	Teamwork (0-6 scale)	4.4 ± 1.0	4.7 ± 0.8	.059 F (1,110) =3.66
F-DB		4.8 ± 0.7	4.9 ± 0.7	

F-DB, facilitator led debriefing; GRS, global rating scales; SD, standard deviation; S-DB, self-debriefing

and were sequentially assigned to control and intervention learner groups varying only in the style of debriefing, rendering the findings likely to be due to the style of debriefing. This finding suggests that there may be implications for matching debriefing models to specific educational objectives or training curricula. Educators should be aware of differences in self-assessment which may result from specific debriefing methods. Self-assessment is an integrally related component of self-efficacy, one's belief in one's ability to succeed in specific situations, which is a core aspect of professionalism. Our results reinforce earlier comparisons showing equivalent educational outcomes using self-debriefing methods vs facilitator led debriefing, specifically in the area of "non-technical skills" as described by Boet, et al.<sup>20</sup> This study documents that post simulation learner self-assessment is not inferior when self-debriefing is substituted for facilitator-debriefing in a mature scenario based simulation curriculum which includes objectives other than non-technical skills.

Self-debriefing may augment reflection through the establishment of an inherently safe learning environment. Evidence is mounting that self-debriefing techniques are valid for routine use

in scenario-based SBE. Increasing interest in self-assessment as a tool for formative assessment suggests the lack of correlation between summative self-assessment and actual performance in experienced healthcare providers does not necessarily imply or prove lack of correlation between formative self-assessment and educational outcomes during learning.<sup>24</sup> Eva et al argues that measures of "self-monitoring" correlated well with performance of healthcare professionals during learning experiences when contrasted with self-evaluation, and further articulates that "... self-assessment is a complicated, multifaceted, multipurpose phenomenon that involves a number of interacting cognitive processes."<sup>25</sup> It functions as a monitor, a mentor, and a motivator through processes such as evaluation, inference, and prediction." Through self-guided debriefing, learners may experience enhanced reflection, absent external perceived facilitator "judgment". Thus, self-guided debriefing may effectively represent facilitated or guided reflection in the cycle of experiential learning, especially if a framework for self-reflection, such as a checklist used in our study, is incorporated in the debriefing design.



This study documents a significant difference between F-DB and S-DB only in team performance assessment by students, not in self-performance assessment. S-DB participants reflected on their performance with group members using the checklist as a guide instead of reflecting during a bedside debriefing by the facilitator. The S-DB cooperative cognitive task enabled participants to understand and share the ideas which guided them and may have improved team situation awareness and problem solving skills, since the process was inherently structured to enhance metacognition by providing explicit performance feedback with a checklist. Three major components of simulation fidelity (realism) for teamwork training are equipment fidelity, environment fidelity, and psychological fidelity. Of the three, psychological fidelity is the most important for teamwork skill training.<sup>26</sup> Team performance is the unique skill that cannot be attained individually, under any circumstances. Because facilitator-guided traditional debriefing has the potential to engage learners solely as individuals as opposed to engagement as integrated team members, the method does not assure a team focused debriefing to close gaps between participant learning and assessment as individuals versus as team members. Guided self-debriefing which engages all participants models team work, and may therefore represent a preferred method for enhanced teamwork debriefing; however, further support for this concept is required by rigorous correlation of self-efficacy results and gold standard teamwork performance assessments.

Categorical analysis showed significant differences in patient assessment and treatment domains for the S-DB group, but not in the teamwork domain. Improved global perception of team performance was thus mostly recognized through perceived team improvement in patient assessment and treatment domains. We posit that this is most likely a result of the fact that healthcare providers are deeply vested in patient related factors, which heavily influence constructs of self-efficacy, especially when the links between teamwork and patient outcomes are not well understood, as is likely in this cohort of novice physicians.

As a secondary outcome, the magnitude of improvement in the overall self- and team- assessment scores from pre-test to post-test was equivalent in both debriefing groups. This result implies that the self-debriefing method compares favorably with the traditional facilitator-led debriefing method.

## Limitations

First, this study did not include a blinded gold standard performance assessment by experts. Correlation with expert performance assessment is required to fully validate these results, since self-assessment is frequently unreliable when compared to gold-standard performance assessment. Second, the results reflect incomplete randomization. Participants were randomized into mixed groups based on scheduling requirements of the educational program, using a lottery for each session. Most groups were over-weighted with same specialty participants. Moreover, their experiences in simulation-based learning, gender, and educational background were not randomized. Future research on effectiveness of self-debriefing should in-

clude video performance ratings by independent blinded expert reviewers. Our results do not provide data which definitively prove efficacy of S-DB for improved performance outcomes compared to the F-DB method.

## Conclusions

Debriefing for simulation based education is a complex endeavor, comprised of multiple factors which influence the debriefing experience; including when (immediate or delayed), where (bedside or elsewhere), what (objectives), why (formative or summative), and how (structure or video). This research explored the Who factor, which plays a central role in the construct and outcomes of debriefing during experiential learning.<sup>6</sup> To explore effective learning processes, this research compared two different debriefing practices: facilitator-debriefing (F-DB) and self-debriefing (S-DB). In teamwork and personal performance, both the F-DB group and the S-DB group rated significant increases in scores from pre- to post-test, with no differences between groups. This finding suggests that self-debriefing may be equivalent to facilitator led debriefing in some educational settings. Our findings support further research to elaborate the potential for self-debriefing method to enhance efficiency of simulation based education by decreasing requirements for faculty debriefers, and equally critical, to investigate specific educational situations in which educational outcomes might be improved through the use of self-debriefing.

Substituting instructorless group self-debriefing guided by checklist for traditional facilitator-led debriefing has theoretical benefits and now empirical results which suggest self-debriefing is worthy of further prospective investigation.

## Conflict of Interest

None of the authors identify a conflict of interest.

## Acknowledgments

We would like to thank the staff of SimTiki Simulation Center for their support of this project: Kris M. Hara RRT and Eileen K Maeda MBA.

### Authors' Affiliations:

- SimTiki Simulation Center, Telehealth Research Institute, John A. Burns School of Medicine, University of Hawai'i at Manoa, Honolulu, HI (SO, BB, JT, DV, DB-P)
- Center for Medical Education Graduate School of Medicine and Faculty of Medicine, Kyoto University, Kyoto Japan (SO)
- Okayama University, Okayama, Japan (YM)

### Correspondence to:

Benjamin Berg MD; University of Hawai'i, John A. Burns School of Medicine, 651 Ilalo St, Ste. 212, Honolulu, HI 96813; Ph: (808) 692-1093; Email: bwberg@hawaii.edu

## References

1. Motola I, Devine LA, Chung HS, Sullivan JE, Issenberg SB. Simulation in healthcare education: a best evidence practical guide. AMEE Guide No. 82. *Med Teach*. 2013 Oct;35(10):e1511-30.
2. Fanning RM, Gaba DM. The role of debriefing in simulation-based learning. *Simul Healthc*. 2007 Summer;2(2):115-125.
3. Hattie J, Timperley H. The power of feedback. *Rev Educ Res*. 2007;77(1):81.
4. Kolb DA. *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice-Hall; 1984.
5. Schön D. *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*. San Francisco, CA: Jossey-Bass; 1987.

6. Van Heukelom JN, Begaz T, Treat R. Comparison of post-simulation debriefing versus in-simulation debriefing in medical simulation. *Simul Healthc*. 2010 Apr;5(2):91-7.
7. Raemer D, Anderson M. Research regarding debriefing as part of the learning process. *Simul Healthc*. 2011 Aug;6 Suppl:S52-7.
8. Lederman LC. Debriefing: toward a systematic assessment of theory and practice. *Simulat Gaming*. 1992;23(2):145-160.
9. Savoldelli GL, Naik VN, Park J, Joo HS, Chow R, Hamstra SJ. Value of debriefing during simulated crisis management: oral versus video-assisted oral feedback. *Anesthesiology*. 2006 Aug;105(20):279-285.
10. Issenberg SB, McGaghie WC, Petrusa ER, Lee Gordon D, Scalese RJ. Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review. *Med Teach*. 2005;27(1):10-28.
11. Hayden J. Use of simulation in nursing education: national survey results. *J Nurs Reg*. 2010;1(3):52-57.
12. Rudolph J, Simon R, Dufresne RL, Raemer DB. There's no such thing as "nonjudgmental" debriefing: a theory and method for debriefing with good judgment. *Simul Healthc*. 2006 Spring;1(1):49-55.
13. Butler RE. Loft: Full-motion simulation as crew resource management training. In: Wiener E, Kanki B, Helmreich R, eds. *Cockpit Resource Management*. San Diego: Academic Press; 1993:231-59.
14. Foraida MI, DeVita MA, Schaefer JJ. Evaluation of an electronic system to enhance crisis resource management training. *Simul Healthc*. 2006;1(2):85-91.
15. Langendyk V. Not knowing that they do not know: self-assessment accuracy of third year medical students. *Med Educ*. 2006;40(2):173-179.
16. Davis DA, Mazmanian PE, Fordis M, Van Harrison R, Thorpe KE, Perrier L. Accuracy of physician self-assessment compared with observed measures of competence: a systematic review. *JAMA*. 2006;296(9):1094-1102.
17. Gordon MJ. A review of the validity and accuracy of self-assessments in health professions training. *Acad Med*. 1991;66(12):762-9.
18. Ward M, Gruppen L, Regehr G. Measuring self-assessment: current state of the art. *Adv Health Sci Educ Theory Pract*. 2002;7(1):63-80.
19. Issenberg SB, Ringsted C, Ostergaard D, Dieckman P. Setting a research agenda for simulation-based healthcare education: a synthesis of the outcome from an Utstein style meeting. *Simul Healthc*. 2011;6(3):155-167.
20. Boet S, Bould MD, Bruppacher HR, Desjardins F, Chandra DB, Naik VN. Looking in the mirror: self-debriefing versus instructor debriefing for simulated crises. *Crit Care Med*. 2011;39(6):1377-81.
21. Rudolph JW, Simon R, Raemer DB, Eppich WJ. Debriefing as formative assessment: closing performance gaps in medical education. *Acad Emerg Med*. 2008 Nov;15(11):1010-6.
22. Vincent D, Berg B. One Night On-Call: A Simulation Exercise for New Interns. *MedEdPORTAL*; 2009. Available at: <http://services.aamc.org/30/mededportal/servlet/segment/mededportal/?subid=1760>
23. Lederman LC. Intercultural communication, simulation and the cognitive assimilation of experience: an exploration of the post-experience analytic process. Presented at the 3rd Annual Conference of the Speech Communication Association, San Juan, Puerto Rico, December 1-3, 1983.
24. Eva KW, Regehr G. Self-assessment in the health professions: A reformulation and research agenda. *Acad Med*. 2005;80(Suppl 10):S46-S54
25. Eva KW, Regehr G. Exploring the divergence between self-assessment and self-monitoring. *Adv Health Sci Educ Theory Pract*. 2011;16(3):311-29.
26. Beaubien JM, Baker DP. The use of simulation for training teamwork skills in health care: how low can you go? *Qual Saf Health Care*. 2004;13:i51-i56.



Drs. Will Coleman & Erika Sox  
Veterinary Emergency +  
Referral Center

## Entrepreneurs are the bravest people we know.

They aren't afraid of words like "no" or "economic downturn." Tell an entrepreneur that something is impossible to do. Then consider it done.

To get started with one of our many business solutions, from cash management to merchant services, call (808) 528-7711.



**HAWAII  
NATIONAL  
BANK**

HawaiiNational.com

Hawaii's Entrepreneurs Start Here.



Equal Opportunity Lender  
Member FDIC/Federal Reserve System



# Cerebral Venous Air Embolism Secondary to Mesenteric Infarction

Ittikorn Spanuchart MD; Aileen Tamura MD; Brent Matsuda MD; Qi Jie Nicholas Leo MBBS; and Hiro Sung MD

## Abstract

*Cerebral air embolism is a rare, yet potentially fatal condition. We present a case of retrograde cerebral venous air emboli arising from the hepatic portal venous system, secondary to a mesenteric infarction.*

*A 69-year-old man with a history of gastrointestinal amyloidosis presented with fever and lethargy. Computed tomography of the brain detected multiple foci of air in the right frontal, fronto-parietal, and left lateral frontal sulci consistent with cerebral venous air emboli. Computed tomography of the abdomen and pelvis revealed moderate thickening and dilatation of the small bowel with diffuse scattered intestinal pneumatosis suggestive of mesenteric infarction with resultant extensive intrahepatic portal venous air. The patient was deemed a poor candidate for surgical intervention and died as a result of septic shock. We believe the cerebral venous air emboli was a result of retrograde flow of air arising from the hepatic venous air ascending via the inferior and superior vena cava to the cerebral venous system.*

*To our knowledge, there have been no reported cases of retrograde cerebral venous air embolism arising from hepatic portal venous system secondary to mesenteric infarction. The clinical significance and prognosis in this setting requires further investigation.*

## Keywords

*cerebral venous embolism, septic shock, mesenteric infarction, intestinal pneumatosis and intrahepatic portal venous air*

## Introduction

Cerebral venous air embolism is a rare, yet potentially fatal condition. This condition is most commonly found in traumatic skull fractures. Occasionally, cerebral venous air emboli occur iatrogenically during manipulation of central venous line catheters.<sup>1-2</sup> This is thought to be associated with the ascension of the air emboli to the cerebral venous system when the central venous pressure is negative relative to atmospheric pressure; other factors that influence the rise of air emboli against the venous blood flow include bubble size and cardiac output.<sup>3</sup> Several case studies have reported the influx of air into the cerebral venous sinuses during procedures such as laparoscopic surgeries, cardiothoracic surgeries, and certain neurological procedures where the patients are in a seated position.<sup>4-9</sup> The air emboli can activate the coagulation cascade which subsequently causes blood brain-barrier breakdown, activation of an inflammatory process and obstruction of cerebral blood flow. Cerebral ischemia may occur, potentially leading to cerebral edema, and ultimately death.<sup>10-13</sup>

In this report, we present a case of retrograde cerebral venous air emboli secondary to mesenteric infarction in the context of gastrointestinal amyloidosis. To our knowledge, this is the first reported case of this nature. Also, we discuss predisposing factors, pathophysiology, and management of this condition.

## Case

A 69-year-old Asian man with a past medical history significant for gastrointestinal amyloidosis, presented to the Kuakini Medical Center Emergency Department (ED) with abdominal pain and fever of 2-day duration. The patient suffered from underlying gastric amyloidosis, which may have contributed to constipation and unexplained weight loss for six months. The esophagogastroduodenography showed chronic superficial gastritis. The biopsy of the gastric corpus, antrum, and duodenum revealed extensive amyloid deposits with a predominance of kappa immunoglobulin light chain. Without other organ involvement and in the absence of serum and urine monoclonal immunoglobulin light chain, the diagnosis of localized Amyloid Light-chain (AL) amyloidosis was made, and surgery referral was planned. However, as the patient developed abdominal pain and fever, he was brought to the hospital. The patient's wife reported that the patient experienced decreased appetite, cramping abdominal pain, and nausea without vomiting or diarrhea. There was no history of exotic or contaminated food ingestion. Subsequently, he developed fever and became lethargic.

In the ED, the initial vital signs showed a body temperature of 38.6 °C, blood pressure 90/60 mmHg, a pulse rate of 162 per minute, a respiratory rate of 32 per minute, and 100 % oxygen saturation on ambient air. On physical examination, the patient was found to be unresponsive and unable to follow commands. Pupils were 3 mm, centered and reactive to light. No seizure activity was observed. Breath sounds were clear on auscultation but accessory respiratory muscle use was observed. His abdomen was rigid and absent bowel sounds were noted. Given that the patient showed signs of impending respiratory failure and was in coma, emergent intubation was performed in the ED to secure the airway.

Pertinent laboratory results revealed a serum white blood cell count of 24,500/uL with 28% bands, elevated creatinine 0.9 mg/dL (baseline 0.3 mg/dL), aspartate aminotransferase 46 IU/L, alanine aminotransferase 115 IU/L, alkaline phosphatase 404 IU/L, total bilirubin 2.6 mg/dL, direct bilirubin 1.3 mg/dL, and albumin 2.5 gm/dL. Arterial blood gas showed pH 6.94, pCO<sub>2</sub> 55 mmHg, pO<sub>2</sub> 84 mmHg, and HCO<sub>3</sub> 11.8 mmol/L. Lactic acid level was 10.8 mEq/L. Imaging studies were performed and chest x-ray on arrival was unremarkable. Based on the findings of the neurologic exam, computed tomography (CT) scan of the brain was ordered and significant findings included multiple foci of air in the right frontal, fronto-parietal, and lateral left frontal sulci consistent with cerebral venous air emboli (Figures 1 and 2). CT scan of the abdomen and pelvis revealed moderate

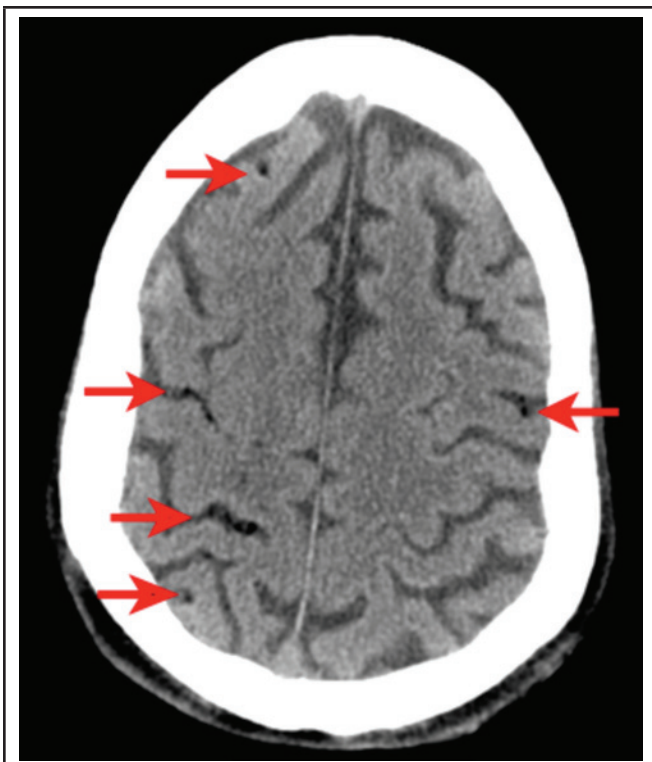


Figure 1. CT brain with bilateral multiple foci of air in the cerebral venous system in right fronto-parietal and lateral left frontal sulci (red arrows).



Figure 2. CT brain with a focus of air in the cerebral venous system in the right frontal sulcus (red arrow).

thickening and dilatation of the small bowel with diffuse scattered intestinal pneumatosis [yellow arrow, Figure 3] suggestive of mesenteric infarction with resultant extensive intra-hepatic portal venous air (red arrow, Figure 3)].

The patient was subsequently admitted to the intensive care unit (ICU) with the presumptive diagnosis of septic shock secondary to an intra-abdominal infection resulting from acute mesenteric infarction. The patient was clinically deteriorating. His blood pressure dropped to 60/40 mmHg. A central venous catheter was placed in the right internal jugular vein. Vasopressor support was initiated for persistent hypotension despite aggressive fluid resuscitation. Blood cultures were obtained and empiric antibiotic coverage with piperacilin-tazobactam and vancomycin was started. General surgery was urgently consulted for the acute mesenteric infarction shown on the CT imaging. However, the patient was deemed a poor candidate for aggressive surgical intervention due to his critically ill state. The patient died as a result of septic shock several hours later despite hemodynamic support.

## Discussion

Cerebral venous air embolism in the absence of traumatic skull fracture is rare. This condition should be highly suspected when neurological deterioration suddenly occurs after the manipulation of the central venous catheter, cardiothoracic surgeries, or

certain neurological procedures. In our patient, we believe that the patient's underlying gastrointestinal amyloidosis was an important contributing factor in causing an acute mesenteric infarction with pneumatosis intestinalis, leading in turn to cerebral venous air embolism.

Localized amyloidosis, a less common form than systemic amyloidosis, is caused by insoluble, misfolded light chain protein deposition in a single organ such as the heart, lung, gastrointestinal tract, liver, kidney, nerve, or soft tissues.<sup>14</sup> Gastrointestinal amyloidosis usually presents with gastrointestinal bleeding, malabsorption, protein-losing gastroenteropathy, diarrhea, constipation, and gastrointestinal dysmotility. Small bowel obstruction has been reported as a presenting symptom of primary amyloidosis involving the gastrointestinal tract.<sup>15</sup> In our patient, we hypothesized that increased intraluminal pressure was due to chronic constipation or gut obstruction in combination with gastrointestinal amyloidosis possibly compromised vascular supply and eventually led to mesenteric infarction and pneumatosis intestinalis as shown on the CT scan.<sup>16</sup> Yamamoto, et al, has reported a similar case of pneumoatosis intestinalis and hepatic portal venous air caused by gastrointestinal perforation in a patient with gastrointestinal amyloidosis.<sup>17</sup>

Additionally, the presence of air in cerebral venous sinuses in our patient was believed to be a result of retrograde flow of hepatic venous air ascending via the inferior and superior vena

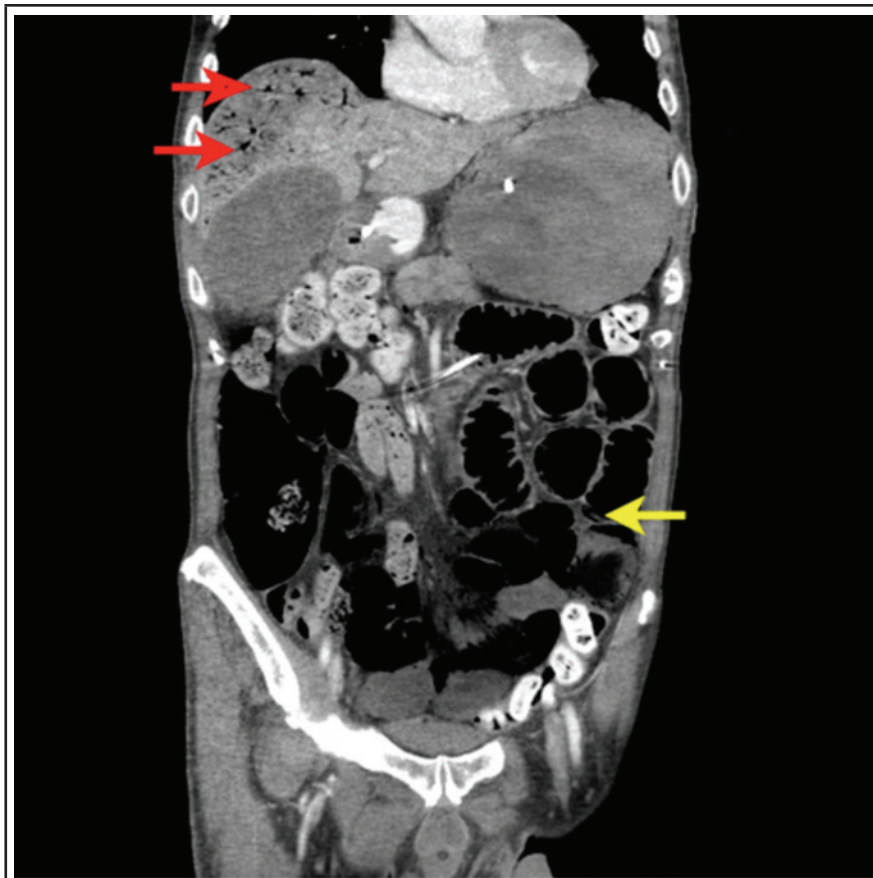


Figure 3. CT abdomen with pneumatosis intestinalis (yellow arrow) and extensive intra-hepatic venous air (red arrows).

cava to the cerebral venous system, thereby accounting for the bilateral cerebral hemispheric involvement observed. The fact that the internal jugular central venous catheter was placed after the brain CT scan was performed, and the presence of air emboli in both hemispheres, excludes the possibility of an iatrogenic air embolism from the central line insertion. Paradoxical air embolism to the brain is a less likely mechanism in this case due to the absence of air in the cerebral arterial system.

This condition is generally managed by immediately interrupting upon suspicion the intervention resulting in cerebral air emboli. Invasive respiratory and hemodynamic support in the ICU is utilized when indicated. Based on animal studies and retrospective studies, hyperbaric oxygen therapy has been proposed to decrease the volume of intravenous bubbles and decrease cerebral edema.<sup>18</sup> Hyperbaric oxygen also promotes cerebral oxygenation of ischemic tissue. However, the true effectiveness of this intervention is unclear due to a lack of prospective randomized trials.

Despite aggressive intervention and close monitoring in the ICU, cerebral venous air embolism is often fatal as a result of cerebral edema and increased intracranial pressure secondary to cerebral venous ischemia. The cause of death in our patient

was most likely due to multi-organ failure related to septic shock rather than ischemic stroke as the head CT scan was unremarkable for cerebral edema. However, an autopsy was not performed in accord with the family's wishes. Given current limitations in knowledge regarding care for patients with retrograde cerebral venous air embolism from hepatic portal venous air due to mesenteric ischemia and pneumatosis intestinalis, the clinical significance and prognosis for this etiology requires further investigation.

### Conclusion

Cerebral venous air embolism is a rare clinical phenomenon. This condition should be highly suspected in cases of acute neurological status deterioration following manipulation of the central venous catheter or following certain surgical procedures. We believe this is the first case of cerebral venous air embolism due to acute mesenteric ischemia and pneumatosis intestinalis to be reported.

### Conflict of Interest

None of the authors identify a conflict of interest.



Authors' Affiliation:

- University of Hawai'i Internal Medicine Residency Program, John A. Burns School of Medicine, University of Hawai'i, Honolulu, HI

Correspondence to:

Ittikon Spanuachart MD; University of Hawai'i Internal Medicine Residency Program, John A. Burns School of Medicine, University of Hawai'i, 1356 Lusitana Street 7th Fl., Honolulu, HI, 96813; Email: ispanuch@hawaii.edu

References

- Schlimp CJ, Loimer T, Rieger M, Schmidts MB, Lederer W. Pathophysiological mechanism and immediate treatment of retrograde cerebral venous air embolism. *Intensive Care Med.* 2006 Jun;32(6):945.
- Nedelmann M, Pittermann P, Gast KK, Mueller-Forell W, Dieterich M. Involvement of jugular valve insufficiency in cerebral venous air embolism. *J Neuroimaging.* 2007 Jul;17(3):258-60.
- Schlimp CJ, Loimer T, Rieger M, Lederer W, Schmidts MB. The potential of venous air embolism ascending retrograde to the brain. *J Forensic Sci.* 2005 Jul;50(4):906-9.
- Zickler P, Hartung HP, Janssen H. "Bubbles in the brain": retrograde venous air embolism in the cavernous sinus. *Eur Neurol.* 2009;61(5):318.
- Yamanaka T, Miyazaki Y, Sato M. Retrograde cavernous sinus air embolism after central venous catheter removal. *No ShinkeiGeka.* 2012 Nov;40(11):991-5.
- Suri V, Gupta R, Sharma G, Suri K. An unusual cause of ischemic stroke. *Ann Indian Acad Neurol.* 2014 Jan;17(1):89-91.
- Pelz D, Hasany A, Butler J, Leung A, Young GB. Cerebral air embolism after central venous catheter self-extraction. *Can J Neurol Sci.* 2014 Mar;41(2):267-9.
- Laurent PE, Coulange M, Bartoli C, Louis G, Souteyrand P, Gorincour G. Retrograde cerebral venous air embolism: A rare cause of intracranial gas. *Diagn Interv Imaging.* 2014 Feb 28.
- Palmon SC, Moore LE, Lundberg J, Toung T. Venous air embolism: A review. *J Clin Anesth.* 1997 May;9(3):251-7.
- Ferry T, Argaud L, Delafosse B, Robert D. Inactive tuberculosis cavity responsible for fatal cerebral air embolism. *Intensive Care Med.* 2006 Apr;32(4):622-3.
- Brouns R, De Surgeloose D, Neetens I, De Deyn PP. Fatal venous cerebral air embolism secondary to a disconnected central venous catheter. *Cerebrovasc Dis.* 2006;21(3):212-4.
- Ploner F, Saltuari L, Marosi MJ, Dolif R, Salsa A. Cerebral air emboli with use of central venous catheter in mobile patient. *Lancet.* 1991 Nov 23;338(8778):1331.
- Van Hulst RA, Klein J, Lachmann B. Gas embolism: pathophysiology and treatment. *Clin Physiol Funct Imaging.* 2003 Sep;23(5):237-46.
- Gillmore JD, Wechalekar A, Bird J, et al. British Committee for Standards in Haematology Committee. Guidelines on the diagnosis and investigation of AL amyloidosis. *Br J Haematol.* 2015 Jan;168(2):207-18.
- Jones J, VanRosendaal G, Cleary C, et al. Primary amyloidosis presenting as small bowel encapsulation. *Can J Gastroenterol.* 2004 Mar;18(3):169-72.
- Desport E, Bridoux F, Sirac C, et al. AL Amyloidosis. *Orphanet J Rare Dis.* 2012 Aug 21;7(1):54.
- Yamamoto A, Kawahito Y, Niimi M, et al. Pneumatosis Intestinalis and Hepatic Portal Venous Gas Caused by Gastrointestinal Perforation With Amyloidosis. *J Clin Gastroenterol.* 2008 Jul;42(6):758-9. doi: 10.1097/MCG.0b013e318030ffc3.
- Blanc P, Boussuges A, Henriette K, et al. Iatrogenic cerebral air embolism: importance of an early hyperbaric oxygenation. *Intensive Care Med.* 2002 May;28(5):559-63. Epub 2002 Mar 21.

# Award-Winning Pediatric Orthopaedic Care

Our award-winning team of pediatric orthopaedic specialists are here for you and your patients.

- Spine & Scoliosis
- Sports & Playground Injuries
- Rehabilitation
- Corrective Surgery
- Orthotics & Prosthetics
- Neighbor Island Clinics



**Jonathan Pellett, M.D.**  
Pediatric Orthopaedic Surgeon  
2014 Physician of the Year, HAH



**Craig Ono, M.D.**  
Chief of Staff & Pediatric  
Orthopaedic Surgeon  
2015 Physician of the Year  
Healthcare Association  
of Hawaii (HAH)



**Andi Kubota,  
R.N., M.S.N., M.B.A., NE-BC**  
Director of Patient Care  
Services/Chief Nursing Officer  
2014 Leadership Award, HAH



**Shriners Hospitals for Children®**  
Honolulu  
**Love to the rescue®**

For more information, call (808) 941-4466.  
[ShrinersHonolulu.org](http://ShrinersHonolulu.org)

# Health Disparities in Native Hawaiians and Other Pacific Islanders Following Hysterectomy for Endometrial Cancer

Keith Terada MD; Michael Carney MD; Robert Kim MD; Hyeong Jun Ahn PhD;  
and Jill Miyamura PhD

## Abstract

*The current study was undertaken to assess disparities in 5 year admission rates and mortality following hysterectomy for endometrial cancer in the State of Hawai'i. Data from the Hawai'i Health Information Corporation was utilized to determine five-year admission rates and overall mortality. Native Hawaiian and Other Pacific Islander (NHOPI) patients were compared to non-NHOPI patients for the period January 1, 2007 to December 31, 2013. Secondary admission rates were significantly higher for NHOPI patients compared to non-NHOPI patients ( $P=.02$ ). Overall mortality was not different. NHOPI patients living on Oahu were less likely to live in Honolulu ( $P=.01$ ), were more likely to have government insurance ( $P=.01$ ), and were significantly younger ( $P=.02$ ) than non-NHOPI patients. The findings suggest that race, insurance, and demographic factors are interrelated and are associated with disparities following surgery for endometrial cancer.*

## Introduction

Disparities in cancer treatment and outcome are well-recognized, but poorly understood. Ethnicity, genetics, and biologic variation may account for some of the observed differences. Many outcome-related disparities, however, result from socioeconomic and demographic factors.<sup>1,2</sup> Cancer related disparities in the State of Hawai'i are understudied; and oncologic challenges facing the Native Hawaiian and Other Pacific Islander (NHOPI) group are poorly understood. There are an estimated 540,000 NHOPI in the United States, representing 0.2% of the total US population. The State of Hawai'i has the highest number of NHOPI individuals, with an estimated 359,000 individuals.

The estimated incidence of endometrial cancer in the State of Hawai'i is 29.4 per 100,000 women<sup>3</sup> Previous studies of health disparities in NHOPI associated with the treatment of endometrial cancer have focused on cancer incidence and disease specific outcome.<sup>4,5</sup> There are no studies examining secondary hospital admissions and overall survival. This is particularly relevant for endometrial cancer, since the cancer prognosis is often favorable, and the majority of patients ultimately die of non-malignant co-morbid conditions.<sup>6</sup> Previous studies have demonstrated high rates of diabetes, hypertension, and other co-morbidities in NHOPI patients.<sup>7</sup> It is unknown, however, how these conditions affect treatment and subsequent outcome for endometrial cancer. In the current study, secondary hospital admission rates were used as a surrogate for overall morbidity. Subsequent admission to any hospital in the State indicates an adverse health event, related either to cancer or other co-morbid conditions. Therefore, this study was undertaken to evaluate subsequent hospital admission rates and overall mortality for NHOPI patients following hysterectomy for endometrial cancer.

## Materials and Methods

The Hawai'i Health Information Corporation (HHIC) is a private, non-profit corporation established in 1994 to collect and analyze statewide health information. HHIC maintains a database collected from Hawai'i's 22 acute care hospitals, and includes inpatient diagnostic, demographic, and discharge information. All acute care hospitals throughout the state voluntarily submit data, including demographic, diagnostic, and treatment information. Patients are assigned a unique identifier, which allows tracking of all inpatient admissions throughout the state for individual patients. The current study analyzed admissions for all patients under the age of 70 that underwent a hysterectomy for endometrial cancer from January 1, 2007 through December 31, 2008. All subsequent inpatient hospitalizations through December 31, 2013 were then analyzed for the entire group. Abstracted information includes patient age (continuous variable), race, payer type (government vs. private), place of residence (Honolulu vs non-Honolulu), admission type (elective vs emergency), disposition (alive vs expired), ICD diagnosis code, and DRG diagnosis code. Subsequent admissions were classified as chemotherapy admissions or non-chemotherapy admissions. NHOPI patients were then compared to a combined group of non-NHOPI patients.

Institutional Review Board approval was obtained from the University of Hawai'i Office of Human Studies, and all data from HHIC was received in de-identified form to assure HIPAA compliance. Multiple visits were tracked by a master patient identification per HHIC protocol and coded using a multiple visit indicator. Visits of an individual patient were sorted by discharge date, and first and last visits were selected by the ordering. Characteristics of the patients were summarized by frequencies and percentages for categorical variables. Chi-squared tests were used for comparing percentages among groups. Relative risks (RR) with 95% confidence intervals were estimated for mortality and secondary hospital admissions. Analyses were conducted using SAS version 9.3 (SAS Institute, Cary North Carolina) and  $P$ -values of less than .05 were considered statistically significant.

## Results

There were 109 NHOPI patients and 192 non-NHOPI patients admitted for a hysterectomy because of endometrial cancer; there were 12 patients with ethnic group unknown. Demographic and clinical characteristics are summarized in Table 1. NHOPI patients who underwent hysterectomy for endometrial cancer

Table 1. Demographic and clinical characteristics for NHOPI and non-NHOPI group. Government insurance includes Medicaid, Medicare, and Department of Defense. ADM = admission.

	NHOPI (n =109)	Non-NHOPI (n = 192)	Overall (n =301)	P-value
Age (year), Mean ± SD	52.0 ± 11.2	54.8 ± 8.8	53.6 ± 10.0	.0241
	n (%)	n (%)	n (%)	
<b>Urban</b>				.2489
No	5 (4.6%)	17 (8.9%)	22 (7.3%)	
Yes	104 (95.4%)	175 (91.1%)	279 (92.7%)	
<b>Payer</b>				.0031
Government	48 (44.0%)	50 (26.0%)	98 (32.6%)	
Private	60 (55.0%)	140 (72.9%)	200 (66.4%)	
Other	1 (0.9%)	2 (1.0%)	3 (1.0%)	
<b>O'ahu</b>				.7929
No	34 (31.2%)	60 (31.3%)	94 (31.2%)	
Yes	75 (68.8%)	132 (68.8%)	207 (68.8%)	
<b>Honolulu in O'ahu</b>				.0135
No	50 (66.7%)	64 (48.5%)	114 (55.1%)	
Yes	25 (33.3%)	68 (51.5%)	93 (44.9%)	
<b>Initial Admission</b>				.3164
Elective	96 (88.1%)	176 (91.7%)	272 (90.4%)	
Emergency/Urgent	13 (11.9%)	16 (8.3%)	29 (9.6%)	
<b>Expired</b>				.1264
No	96 (88.1%)	180 (93.8%)	276 (91.7%)	
Yes	13 (11.9%)	12 (6.3%)	25 (8.3%)	

were significantly younger than non-NHOPI patients (mean age 52.0 years vs 54.8 years,  $P=.02$ ). NHOPI patients were more likely to have government insurance (44% government insurance vs 26% government insurance for non-NHOPI patients,  $P=.01$ ); government insurance included Medicare, Medicaid, and Department of Defense. Finally, NHOPI patients living on O'ahu were less likely to live in Honolulu (33% residing in Honolulu vs 51.5% for non-NHOPI patients,  $P=.01$ ).

Overall mortality for NHOPI patients undergoing hysterectomy for endometrial cancer was not significantly different from non-NHOPI patients undergoing hysterectomy for endometrial cancer (12% deaths in NHOPI vs 6.3% in non-NHOPI,  $P=.12$ ).

NHOPI patients were significantly more likely to be admitted to an acute care facility within five years following a hysterectomy for endometrial cancer ( $P=.02$ ). Subsequent admissions were classified as chemotherapy admissions or non-chemotherapy admissions. Non-chemotherapy admissions were significantly higher in NHOPI patients than non-NHOPI patients (RR 1.49, 95% CI 1.11-1.98). Chemotherapy admissions were similar for the two groups (RR 1.20, 95% CI 0.54-2.68). The three most common diagnoses for non-chemotherapy admissions in NHOPI patients were acute cardiovascular events, pulmonary embolus, and cellulitis or sepsis.

## Discussion

Although some investigators have attributed disparities in cancer outcome to intrinsic genetic factors and the interaction of host and tumor biology, there is a growing body of evidence to suggest that many disparities may be attributable to the marginalization of ethnic minorities and inequities in health care delivery.<sup>8</sup> The current study represents a preliminary analysis of the five-year follow-up for NHOPI patients following hysterectomy for endometrial cancer. Although NHOPI patients had significantly higher rates of admission in the five years following hysterectomy, it is difficult to isolate a specific underlying causation. Diet and lifestyle are potential confounding variables. The current study also indicates that demographic and insurance factors should be considered.

Setiawan, et al, reported in 2007 that Native Hawaiians appeared to have a similar risk for endometrial cancer as Caucasians; Native Hawaiians also presented with similar stage and tumor characteristics as Caucasians.<sup>4</sup> The current study did not include data on stage; however the 5-year admission rates for elective chemotherapy were similar for NHOPI and non-NHOPI patients. This suggests a similar proportion of patients with advanced stage or poor prognostic factors requiring post-operative therapy. Non-chemotherapy admissions are indicative



of complications related to cancer or unrelated non-malignant co-morbidities. Excess non-chemotherapy admissions among NHOPI patients suggests that underlying non-cancer health issues play a significant role in outcome.

NHOPI patients were more likely to have government insurance (a proxy for socioeconomic status), not live in Honolulu, and were significantly younger. These observations indicate that race, insurance status, and place of residence all interrelate, and are associated with adverse outcomes. Endometrial cancer is also associated with diet and lifestyle driven co-morbidities, such as obesity and diabetes;<sup>9</sup> it is unclear if the younger age at presentation indicates a greater prevalence of these co-morbidities in NHOPI women. The findings suggest, however, that insurance and demographic factors, in combination with a higher incidence of co-morbidities, may contribute to a pattern of recurrent hospital admissions.

Since 2000, The US Census Bureau has recognized NHOPI as a distinct ethnic group. NHOPI refers to persons native to Hawai'i or originating in the islands of Polynesia, Micronesia, and Melanesia. This group, therefore, is quite heterogeneous, and may include individuals from Samoa, Guam, Palau, and The Commonwealth of the Northern Mariana Islands, in addition to Native Hawaiians. Although NHOPIs are a relatively obscure ethnic group on the mainland United States, they represent 26% of the population in the State of Hawai'i (US Census Bureau). NHOPI have high reported rates of obesity, hypertension, hyperlipidemia, and the highest prevalence of diabetes among ethnic groups in Hawai'i.<sup>7</sup> In the current study, only the NHOPI group demonstrated significantly higher 5-year admission rates, when compared to all other ethnicities.

Previous studies have examined disparities in outcome for Black women and Hispanic women treated for endometrial cancer. These studies demonstrate that socioeconomic status, comorbidities, cultural barriers, and tumor biology all contribute to higher cancer specific mortality.<sup>10-12</sup> A 2002 study by Kost, et al, reported a worse outcome for Asians and Pacific Islanders treated for endometrial cancer.<sup>5</sup> Five year survival for Asian-Pacific Islanders was 77%, compared to 91% for Caucasians ( $P<.01$ ). The authors attribute the findings to underlying ethnic and genetic differences; but the potential impact of socioeconomic and demographic factors were not addressed. The current study did not examine cancer specific mortality; and overall mortality was not significantly different between NHOPI and non-NHOPI patients. By examining secondary admission rates following hysterectomy for endometrial cancer, the current study examines overall health outcome and well-being. Secondary admission rates include health issues related to other co-morbidities, in addition to cancer related morbidities.

The majority of patients undergoing hysterectomy for endometrial cancer do not require multiple hospital admissions. The current study, however, indicates that NHOPI patients are at higher risk of hospital admission for five years following hysterectomy for endometrial cancer. Pre-existing non-malignant co-morbidities are likely contributing to this observation. Findings of the current study also indicate that insurance status and

place of residence may also be associated. Surgery for cancer, therefore, can be a basis for the "teachable moment." Patients that are marginalized or not integrated into mainstream health care should be encouraged to develop long-term strategies for preventive care. Shortcomings of the current study include a lack of tumor specific information and an inability to identify adverse events or mortality occurring outside of the acute care setting. Further investigation is warranted to better understand determinants of health disparities in the State of Hawai'i.

## Conflict of Interest

None of the authors identify a conflict of interest.

## Acknowledgement

Biostatistical support was partially funded by grants from the National Institute on Minority Health and Health Disparities U54MD007584 and G12MD007601 and P20GM103466 from the National Institutes of Health. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

### Authors' Affiliations:

- Department of Obstetrics, Gynecology, and Women's Health, John A. Burns School of Medicine, University of Hawai'i, Honolulu, HI (KT, MC, RK)
- Biostatistics Core, John A. Burns School of Medicine, University of Hawai'i, Honolulu, HI (HJA)
- Hawai'i Health Information Corporation, Honolulu, HI (JM)

### Correspondence to:

Keith Y. Terada MD; 1329 Lusitana St. #703, Honolulu, HI 96813;  
Ph: (808) 526-2477; Email: kterada@ucera.org

## References

1. Walker GV, Grant SR, Guadagnolo A, Hoffman KE, Smith BD, Koshy M, et al. Disparities in stage at diagnosis, treatment, and survival in nonelderly adult patients with cancer according to insurance status. *J Clinical Oncol.* 2014;32:3118-3125.
2. Massarweh NN, Chiang Y, Xing Y, Chang GJ, Haynes AB, You YN, et al. Association between travel distance and metastatic disease at diagnosis among patients with colon cancer. *J Clinical Oncol.* 2014;32:942-948.
3. Centers for Disease Control and Prevention. Uterine cancer rates by state. <http://CDC.gov/cancer/uterine/statistics/state.htm>. Accessed December 28, 2015.
4. Setiawan VS, Pike MC, Kolonel LN, Nomura AM, Goodman MT, Henderson BE. Racial/ethnic differences in endometrial cancer risk: The multiethnic cohort study. *Am J Epidemiology.* 2007;165:262-270.
5. Kost ER, Hall KL, Hines JF, Farley JH, Nycum LR, Rose GS, et al. Asian-pacific islander race independently predicts poor outcome in patients with endometrial cancer. *Gynecol Oncol.* 2003;89:218-226.
6. Ward KK, Shah NR, Saenz CC, McHale MT, Alvarez EA, Plaxe SC. Cardiovascular disease is the leading cause of death among endometrial cancer patients. *Gynecol Oncol.* 2012;126:176-179.
7. Marjorie MK, Sinclair K, Saito EP, Baumhofer KN, Kaholokula JK. Cardiometabolic health disparities in Native Hawaiians and Other Pacific Islanders. *Epidemiologic Reviews.* 2009;31:113-129.
8. Daly B, Olopade OI. A perfect storm: How tumor biology, genomics, and health care delivery patterns collide to create racial survival disparity in breast cancer and proposed interventions for change. *Ca Cancer J Clin.* 2015;65:221-238.
9. Berek JS, Hacker NF. *Practical Gynecologic Oncology*, Philadelphia, PA, Lippincott Williams and Wilkins, 2005.
10. Madison T, Schottenfeld D, James SA, Schwartz AG, Gruber SB. Endometrial cancer: socioeconomic status and racial/ethnic differences in stage at diagnosis, treatment, and survival. *Am J Public Health.* 2004;94:2104-2111.
11. Rodriguez AM, Schmeler KM, Kuo Y. Disparities in endometrial cancer outcomes between non-Hispanic white and Hispanic women. *Gynecol Oncol.* 2014;135:525-533.
12. Collins Y, Holcomb K, Chapman-Davis E, Khabele D, Farley JH. Gynecologic cancer disparities: A report from the health disparities taskforce of the Society of Gynecologic Oncology. *Gynecol Oncol.* 2014;133:353-361.

# MEDICAL SCHOOL HOTLINE

## **Liaison Committee for Medical Education Accreditation, Part VI: Academic, Career, Personal Counseling/Student Health and Well-Being**

Richard W. Smerz, DO, PhD, MTM&H, FACPM; Sheri F.T. Fong MD, PhD;  
and Damon H. Sakai MD

*The Medical School Hotline is a monthly column from the John A. Burns School of Medicine and is edited by Satoru Izutsu PhD; HJMPH Contributing Editor. Dr. Izutsu is the vice-dean of the University of Hawai'i John A. Burns School of Medicine and has been the Medical School Hotline editor since 1993.*

Previous installments in the Medical Hotline addressed the accreditation process that will occur for the John A. Burns School of Medicine (JABSOM) in January 2017, and provided insight into some of the standards that will be assessed by the Liaison Committee for Medical Education (LCME).<sup>1-5</sup> This article provides an overview of some of the student services that make the journey through medical school more navigable. Academic advising, career counseling, personal counseling, and student well-being activities are required programs that are vital to medical student success.

### **Introduction**

One characteristic of professional identity is the mastery of a specific body of knowledge.<sup>6</sup> That body of knowledge has grown exponentially over the millennia, particularly in this age of technology and instant communication. Yet, students have only four years to amass as much of it as possible. The pursuit of a medical degree is arduous, demanding, and stressful. It is imperative that a medical school has in place a support infrastructure to confront and overcome those challenges. The LCME, through its standards, has defined the essential programs that each medical school must have. The following are examples of how JABSOM is addressing these requirements.

### **LCME Element 11.1: Academic Advising**

LCME Element 11.1 states:

*A medical school has an effective system of academic advising in place for medical students that integrates the efforts of faculty members, course and clerkship directors, and student affairs staff with its counseling and tutorial services and ensures that medical students can obtain academic counseling from individuals who have no role in making assessment or promotion decisions about them.*

The faculty and staff of JABSOM are committed to helping each and every student achieve success in their quest to

obtain their medical degree. JABSOM offers a robust and active academic advisory system that integrates the efforts of faculty members, PBL tutors, course directors, student affairs and student peers. This system functions both horizontally and vertically throughout the tenure of the medical students' career and employs a multipronged/multilevel approach to enhance academic success.

The centerpiece of the JABSOM academic advising system is the JABSOM Mentoring Program (JMP) that began in the 2009-2010 academic year. JMP fosters a safe and supportive environment, and promotes the development and enhancement of skill sets that facilitate academic and professional success. It is modeled after a program pioneered by Vanderbilt University Medical School,<sup>7</sup> and employs "mutual mentoring," or "mentoring pods," which encourages the creation of strong, productive, and substantive mentoring networks/partnerships.

An advising "pod" consists of 2-3 faculty advisors/mentors, and students from each class. The more senior students serve as mentors to the more junior students. Students remain in the same pod over four years, with the new MS1s assigned to one of fourteen existing pods during orientation week, based on their first PBL group assignment. Faculty mentors serve as the advisors to the pod and to each individual student in their pod.

The scope of faculty mentoring may include, but is not limited to, academic advising, student well-being, professional development, life-balance, career planning, and student advocacy. To ensure regular faculty-student interactions, pods meet quarterly, at a time coordinated with the pre-clerkship course directors and the MS3 schedule, and with MS4s welcome to attend when available. JMP has been instrumental in organizing *student enrichment activities* such as creating a practice anatomy/pathology exam for the MS1s, assisting with clinical skills instruction, and providing support for functions such as the White Coat Ceremony and JABSOM Ohana gathering for new students and their families. JMP evaluations have shown that the students found mentoring by their peers to be valuable and the planned activities useful.

During the first two years, medical students can seek academic advising from people at multiple levels, depending on need and comfort level. Students may approach their PBL facilitators or course directors, who assess the nature of the problem and provide guidance, or refer the student for more specialized counseling/assistance. Individual meetings with the current course director are mandatory for those students who have a borderline or unsatisfactory performance on the formative mid-unit exams. During these required meetings, the student is offered counseling and tutorial services, as well as referral to appropriate resources as needed. Students may also seek the advice of their faculty advisor, or any of the faculty in the Office of Medical Education or Office of Student Affairs, including the JABSOM Learning Specialist. On occasion, students may be referred to the Learning Specialist for assistance with establishing study plans, time-management issues, test-taking techniques, and screening for potential learning disabilities. Academic advising is not confined to problems and difficulties. There should also be planning for enrichment activities for those students with satisfactory or excellent academic performance.

Medical students in their third or fourth years can seek academic advising from their clinical preceptors or clerkship directors. Clinical preceptors provide formal formative and summative feedback at mid-rotation and at the conclusion of a rotation, respectively. Academic or professional concerns are transmitted from the clinical preceptors to the clerkship director, who meets and counsels the student, and may, when needed, refer the student to the Office of Student Affairs (OSA) for further assessment, counseling, and guidance.

After each block of instruction, the Evaluation, Remediation, and Review Committee (ERRC) convenes to review all student academic performance and, as needed, outline a proscribed plan to improve a student's academic performance. The ERRC is comprised of the Course Directors for the pre-clerkship years as well as representatives from the 3rd and 4th year clinical years. The Learning Specialist and the Director of OSA are also members of the committee, contributing to an integrated effort to support students. The prescribed plan for the student often includes meeting with one of their faculty advisors, the Learning Specialist and the OSA Director. The latter two have no role in making assessment or promotion decisions about the students. Since each student has multiple faculty advisors in their pod, the student can also choose to meet with a faculty mentor who is not one of their current course or clerkship directors. In addition, the small class size allows the core faculty to know the students well. This promotes early identification of emerging student issues and timely intervention.

### **LCME Element 11.2: Career Advising**

LCME Element 11.2 states:

*A medical school has an effective career advising system in place that integrates the efforts of faculty members, clerkship directors, and student affairs staff to assist medical students in choosing elective courses, evaluating career options, and applying to residency programs.*

Career advising at JABSOM employs both formal and informal approaches. Advising commences early in medical school to increase the students' chances in successfully gaining a position in a residency of their choice. Early in the first year, OSA faculty and staff introduce students to the Association of American Medical Colleges (AAMC) Careers in Medicine program<sup>8</sup> via a formal presentation. Students are encouraged to use the tools provided to assist in ascertaining possible fields of interest. As they proceed through the pre-clerkship curriculum, students are introduced, via patient case scenarios, to a variety of specialties. As they enter their clinical clerkships in the third year, students are advised by OSA to be open-minded and utilize opportunities to explore different fields. Additional exposure to the various specialties occurs during the third year colloquia.

Clinical faculty and clerkship directors fulfill a vital role in providing guidance and insight to students concerning their specialties and the aptitudes of the students for them. Additionally, students are encouraged to revisit the AAMC Careers in Medicine assessments to see if their interests have changed since their first year. As they near the end of their 3rd year, students choose a career advisor in their specialty field(s) of interest, and map their 4<sup>th</sup> year schedule. Students are also required to meet with the OSA Director to discuss specialty selection. Based on the student's academic record and their competitiveness for their specialty of choice, advice and guidance are provided.

Throughout their tenure, students have opportunities to explore different specialties. General career advising occurs in the advising pods. An annual Career Night hosts community physicians from different specialties to share their path, experiences and real world practices. Specialty Interest Groups invite physicians to come throughout the year to speak about their specialties. Students are also encouraged to speak with faculty members, advisors, and the OSA Director about specialty selection at any time. The OSA Director is the primary point of contact in the career advising efforts at JABSOM.

The ultimate metric to judge the effectiveness of JABSOM's career advising is the outcome of the annual National Resident Matching Program. In 2016, 100% of the students who participated gained a residency position, and 98% matched to their first choice of specialty.

### **LCME Element 12.3: Personal Counseling/Well-being Programs**

LCME Element 12.3 states:

*A medical school has in place an effective system of personal counseling for its medical students that includes programs to promote their well-being and to facilitate their adjustment to the physical and emotional demands of medical education.*

JABSOM strives to create a learning environment that lessens the stress associated with the demands of medical education. The availability of student-focused services on student wellness, professionalism, financial aid, and academic well-being are introduced during the first-year orientation. Senior and second year students conduct a panel discussion to provide



tips and insights that the new students might find useful as they commence their studies. MS1s are required to develop a personal well-being plan during the Orientation Week. This plan is discussed with the OSA Director during the first month the students are enrolled. The White Coat Ceremony<sup>9</sup> and Parents' Day activities are held at the culmination of orientation week.

The JABSOM "Medical Student Wellness Handbook" is made available to all students. The material addresses stresses, services, and solutions, including a variety of resources on healthy lifestyles, the importance of adequate sleep, safety and emergency action plans, and the importance of maintaining good relationships with family and friends. Student financial wellness is introduced, and study skills and learning resources are emphasized.

Throughout the curriculum are sessions that are sequenced appropriately to address anticipated challenges. The first curricular unit includes sessions on Healthy Living and Medical Student Well-Being, as well as short Personal Effectiveness and Professionalism (PEP) modules that assist students with stress and time management. JABSOM also offers a pre-clerkship elective on Medical Student Well-Being, and provides "wellness kits" to MS1s and MS2s. These kits often include tips for dealing with stress and healthy food items, and are distributed annually during exam time. During the Transition to Clerkship Week, students participate in a Clerkship Well-Being session. At this time, they are encouraged to review and revise their personal well-being plans that they created during orientation to medical school. Finally, during Senior Seminars, students attend a session on Internship Well-Being where students are provided insights into internship and tips pertinent to that unique year of training.

At JABSOM, each class elects student representatives including a Health and Wellness Chair who is responsible for planning social events and a Class Ombudsperson to share issues with the administration. Additionally, there is an Inter-Class Council which is student-led and through which student concerns and/or issues can be raised with the school administration.

There are numerous social events that promote student well-being and reduce stress. Early in the first year, there is a picnic hosted by MS2s, and another event sponsored by MS4s. Traditional student activities such as Medical Student Olympics and student basketball league foster healthy interactions between the first and second year classes, as well as faculty. One of the highlights each year is the Annual Halloween event in which the MS1s and MS2s demonstrate their creativity in costume design and talent. The faculty and staff of the Office of Medical Education actively "compete" with the classes on this day, and it provides stress relief for the pre-clerkship students who are half-way through their curricular unit. Another tradition that has been present for many years is the hosting of a Senior Luau by the first year students, who perform skits, play music, and dance hula in honor of the graduating seniors. Daily wellness classes, such as yoga, hula, zumba, qi gong, and west coast swing,

are available on campus. In addition, our proximity to the ocean and park allows for surfers and joggers to exercise before and after classes.

Personal counseling is available to all medical students by confidential referral through the Office of Students Affairs, through the confidential services of the Counseling and Student Development Center on the University of Hawai'i (UH) Manoa Campus, and through private arrangements with coverage by student health insurance. An on-site counseling professional has been hired by OSA to supplement counseling services at JABSOM, both by providing primary counseling and by enhancing counseling skills of academic and career advisors. Services at the UH Manoa Counseling and Student Development Center are confidential, and neither OSA nor other departments at the medical school receive information on the students who may choose to independently access their services. The JABSOM Office of Student Affairs maintains a list of psychiatrists in private practice who are not part of the student educational programs and who have agreed to see medical students at their private offices.

The financial burden of medical education can affect student well-being. At JABSOM, every effort is made to distribute scholarships widely throughout the student body. Additionally, information about private scholarships from the community and national organizations are made available along with application strategies and writing tips. The Scholarship Director in the Office of Student Affairs is available to assist students in their scholarship search and review of applications, and for individual counseling. In addition, a financial literacy program, with mandatory sessions throughout all four years, educates medical students about debt management. During the senior seminars, JABSOM invites a financial aid representative from the AAMC to talk to students about debt management and loan repayment strategies. Additional non-mandatory sessions at various times throughout the academic year, as well as periodic emails, provide specific information regarding budget formation, debt management, tips, and resource materials. Students are also made aware of the AAMC Education Debt Manager program.<sup>10</sup> In the past two years, these efforts have resulted in JABSOM graduates leaving medical school with significantly less educational debt than the national average.

All three of the above elements - academic advising, career advising, and personal counseling/well-being are dependent on student-faculty-administration relationships. This was cited as one of the strengths of JABSOM in the recently completed Independent Student Analysis (ISA), which is a survey created, distributed, analyzed and reported by students from all four classes independently from the oversight of faculty and administration. The ISA executive summary stated:

*Specific strengths of OSA and OME which enhance the student-faculty-administration relationships include the incredible accessibility of faculty, staff, and administration, faculty's willingness to go above and beyond when responding to students'*

questions both inside and outside of the classroom, frequent opportunities to provide meaningful feedback on the curriculum, transparency with reviewing our feedback and concerns, and integration of students in key medical school committees.

In addition, results from the AAMC Graduation Questionnaire demonstrate that JABSOM is effective in these areas.

Table 1. Percentage of students from JABSOM and all schools who responded they were satisfied or very satisfied with the listed services, programs and/or activities on the 2014 AAMC Graduation Questionnaire.		
	JABSOM	All schools
Academic counseling	90.0%	74.9%
Tutoring	89.7%	72.7%
Personal counseling	90.6%	75.1%
Financial aid administrative services	86.7%	79.5%
Overall educational debt management counseling	83.7%	72.5%
Faculty mentoring	92.6%	77.8%
Career preference assessment activities	75.5%	64.0%
Overall satisfaction with career planning services	66.7%	65.1%
Student programs/activities that promote effective stress management, a balanced lifestyle and overall well-being	94.5%	74.0%

### Final Comments

The faculty and staff of JABSOM are committed to and take great pride in the effort they place in providing each student with the best chance of success. That dedication is not limited to the classrooms or clinical sites, but permeates the background support efforts of JABSOM. It complements the curriculum and is made possible by those who tirelessly provide the services, counseling, advice, and assistance that are essential to that end.


### Authors' Affiliations:

- Office of Student Affairs, University of Hawai'i, Honolulu, HI (RWS)
- Office of Medical Education, University of Hawai'i, Honolulu, HI (SFTF, DHS)

### References

1. Sakai DH, Kasuya RT, Fong SFT, Kaneshiro RA, Kramer K, Omori J, Takanishi D, Wong C, Hedges J. Liaison Committee on Medical Education Accreditation: Part I: The Accreditation Process. *Hawaii J Med Public Health*. 2015;74(9):311-314.
2. Fong SFT, Kramer K, Sakai DH, Kasuya RT, Ching N, Nishimura S, Smerz RW, Omori JSM. Liaison Committee on Medical Education Accreditation: Part II: The Graduation Objectives. *Hawaii J Med Public Health*. 2015;74(11):378-381.
3. Fong SFT, Omori JSM, Sakai DH, Nishimura S, Ching N, Kramer K, Kasuya, RT. Liaison Committee on Medical Education Accreditation: Part III: Educational Program Content, Curriculum Management, and Student Assessment. *Hawaii J Med Public Health*. 2015;74(12):412-414.
4. Fong SFT, Sakai DH, Kasuya RT, Kramer K, Wong VS, Haning W, Asano I, Uyehara-Lock JH, Thompson K, Omori JSM, Hirose-Wong SM, Horio D. Liaison Committee on Medical Education Accreditation: Part IV: Pre-clerkship Education. *Hawaii J Med Public Health*. 2016;75(2):48-51.
5. Len KA, Riklon S, Aneqawa LJ, Burgess LP, Gavero GC, Lubimir KT, Omori JSM, Savala MC, Shimamoto RT, Suares GA, Sakai DH. Liaison Committee on Medical Education Accreditation: Part V: Clerkship Education. *Hawaii J Med Public Health*. 2016;75(3):78-81.
6. Cruess SR, Johnston S, Cruess RL. "Profession": A Working Definition for Medical Educators. *Teaching and Learning in Medicine*. 2004;16(1):74-76.
7. Drolet BC, Rodgers S. A Comprehensive Medical Student Wellness Program-Design and Implementation at Vanderbilt School of Medicine. *Acad Med*. 2010;85(1):103-110.
8. Association of American Medical Colleges. Careers in Medicine Program. <https://www.aamc.org/cim/>. Accessed March 21, 2016.
9. Arnold P. Gold Foundation. White Coat Ceremony. <http://humanism-in-medicine.org/programs/rituals/white-coat-ceremony/>. Accessed March 21, 2016.
10. Association of American Medical Colleges. Education Debt Manager for Graduating Medical School Students. <http://members.aamc.org/eweb/upload/15-394FIRSTExitEDMWEBFinalwithlinks.pdf>. Accessed March 21, 2016.




## What matters most?



**When it comes to your information management program, what matters most to you? We think you will agree, it's access: secure and compliant, yet fast and convenient for you. Access serves healthcare organizations throughout Hawaii.**

**The right choice for you? It's Access.**  
Call us today to arrange your FREE consultation and quote.

**Access**  
Information Protected.  
**InformationProtected.com**  
**808.673.3200**

*Access to, storage, management and destruction of both paper and digitally based information. Nationwide.*

# INSIGHTS IN PUBLIC HEALTH

## **Safe Messaging for Youth-Led Suicide Prevention Awareness: Examples from Hawai'i**

Jane J. Chung-Do DrPH; Deborah A. Goebert DrPH; Kris Bifulco MPH; Jeanelle Sugimoto-Matsuda DrPH; JoAnne Balberde-Kamali'i MSW; Dane Ka'ae BA; Leslie Lau Hee; and Larry Walter MA, M.Div.

*Insights in Public Health is a monthly solicited column from the public health community and is coordinated by HJMPH Contributing Editors Tetine L. Sentell PhD from the Office of Public Health Studies at the University of Hawai'i at Manoa and Donald Hayes MD, MPH from the Hawai'i Department of Health in collaboration with HJMPH Associate Editors Ranjani R. Starr MPH and Lance K. Ching PhD, MPH from the Hawai'i Department of Health.*

### **Youth Suicide as a Public Health Issue in Hawai'i**

Youth suicide is a serious, yet preventable public health problem. The US suicide rate has more than doubled among youth since 1950,<sup>1</sup> but has remained relatively stable over the last few decades.<sup>2</sup> In Hawai'i, an average of one suicide occurs every two days, with suicide being the leading cause of injury-related death among 15-24 year olds.<sup>3</sup> Furthermore, compared to national averages, Hawai'i's youth are more likely to report that they have seriously considered attempting suicide, made a suicide plan, and attempted suicide.<sup>4</sup> Although suicide was once a rare occurrence in Hawai'i, suicide rates among Native Hawaiians have been increasing since the state of Hawai'i began collecting suicide statistics in 1908.<sup>5</sup> Native Hawaiian and Pacific Islander (NHPI) adolescents are now among the highest risk for suicide-related behaviors in the United States.<sup>5-7</sup> Despite these health disparities, there are many strengths and resources that reside in Hawai'i's NHPI communities, with youth reporting that they receive a tremendous amount of informal support from community members.<sup>8</sup>

Those living in rural communities also have higher rates of suicide and suicide attempts compared to urban residents.<sup>9,10</sup> All five inhabited islands outside of metropolitan Honolulu, as well as specific areas of O'ahu, are considered rural and federally designated as Health Professional Shortage Areas and Medically Underserved Populations.<sup>11</sup> Rural youth in Hawai'i are nearly four times more likely than urban youth to use the emergency department for mental health care.<sup>12</sup> However, as with the ethnic groups discussed above, rural communities have strong social connections and are willing to come together on common concerns.<sup>13</sup> Therefore, suicide prevention programs that address ethnic and geographic disparities, as well as the unique strengths and resources in these communities are needed. This paper describes the youth-led community awareness efforts for youth suicide prevention that were implemented in Hawai'i's rural communities and provides examples of how these efforts integrated safe messaging guidelines.

### **Hawai'i's Caring Communities Initiative for Youth Suicide Prevention**

In 2011, the Department of Psychiatry at the University of Hawai'i at Manoa, John A. Burns School of Medicine was awarded a three-year Garret Lee Smith grant for youth suicide prevention from the Substance Abuse and Mental Health Services Administration (SAMHSA). Through this grant, the Hawai'i's Caring Communities Initiative (HCCI) was created with a mission of preventing youth suicide by partnering with youth-serving community organizations,<sup>14</sup> emergency departments, and critical access hospitals.<sup>15</sup> The community partners and emergency departments received training through the Connect Suicide Prevention Training Program, which is an evidence-based program developed by New Hampshire's National Alliance on Mental Illness.<sup>16</sup> Using a combination of PowerPoint slides, interactive exercises, and case scenarios, the Connect Program uses a socioecological model to enhance participants' abilities to recognize warning signs of suicide risk, increase their comfort level in making connections with youth, promote knowledge of risk and protective factors, and reduce stigma around mental health issues. It also seeks to increase coordination and communication across organizations working in the area of youth suicide prevention and response efforts by providing a common language of suicide prevention-related terms and concepts. The Connect Program is responsive to the target community's needs and strengths by allowing for cultural tailoring while adhering to evidence-based practices in suicide prevention,<sup>17</sup> which is an important factor in promoting mental wellness among minority and indigenous youth.<sup>18</sup>

Community-based suicide prevention awareness campaigns have been shown to be an effective strategy to reduce suicide and increase awareness.<sup>19,20</sup> Therefore, HCCI worked directly with community organizations in six rural communities across the state of Hawai'i that have high proportions of NHPIs, including Kahuku and Waimanalo on O'ahu, Hilo on Hawai'i Island, Kahului on Maui, Kaua'i, and Moloka'i.<sup>21</sup> One or two staff members from each organization was selected to serve as



the Community Coordinator for HCCI. They participated in an intensive three-day Connect Training Program and were certified as Connect community trainers. The Community Coordinators then recruited youth from their community and trained them on suicide prevention using the Connect Program. Over the course of the grant, the Community Coordinators and the HCCI staff worked closely together to empower the youth to be youth leaders in suicide prevention. With the guidance of the Community Coordinators, the youth provided suicide prevention trainings to their peers and community members as well as developed and implemented suicide prevention awareness campaigns and events that adhered to safe messaging guidelines.<sup>14</sup>

### Safe Messaging Guidelines for Suicide Prevention

Safe messaging is an important concept when developing community awareness campaigns and events related to suicide prevention.<sup>22</sup> Studies show that when a suicide is highly publicized and described in details, the potential for “copycat” suicides increases, particularly among youth.<sup>23</sup> The magnitude of the increase in suicides following a suicide story is proportional to the amount, duration, and prominence of media.<sup>24</sup> For example, a review of 293 findings from 42 studies found that media coverage of suicide deaths of celebrity or political figures increase that likelihood of a copycat effect by 14.3 times.<sup>25</sup> In response, safe messaging guidelines have been developed to ensure that public messages about suicide do not unintentionally increase suicide risk for vulnerable individuals who are receiving the messages. These guidelines can be applied to community awareness campaigns and educational and training efforts for suicide prevention for the general public (see Table 1).<sup>26</sup>

In addition, community-based public awareness campaigns offer survivors of suicide attempts and those who have lost someone to suicide a space to tell their stories, as a way for them to share with the community, to heal, and to put a face to the issue of suicide. Safe messaging should also be applied in these storytelling activities. Safe messaging for survivor speakers includes ensuring the speaker is at a point in their healing process where the focus is on what can be done to make things better in the future, and offer a message of hope to the audience.<sup>27</sup> In addition, graphic details of the death should not be shared. It is also important to ensure that the speaker is provided a non-judgmental and compassionate space where the audience has an understanding of mental health. Moreover, “resource

people” who are trained to provide resources and emotional support for anyone who might have an emotional reaction to the topic, should be present at all suicide prevention trainings and events.

Although the importance of safe messaging is widely accepted, there are limited resources to train youth and community members to translate and apply these concepts to their community awareness efforts. Thus, the HCCI team developed a safe messaging training using a PowerPoint presentation as well as interactive exercises to show some of the most common examples of unsafe messaging in the media and encourage youth to critically think about the safety of various community awareness ideas. The training emphasized the need to understand the audience and tailor messages to their context while ensuring the safety of the recipients. For example, trainees were taught to avoid data that normalizes or sensationalizes suicide or display pictures of suicide methods (ie, guns, ropes, etc). The use of positive messages that instill hope, resiliency, and healing was also encouraged.

As the youth developed ideas for their community awareness campaigns, the HCCI team provided continuous feedback to ensure their activities and messages adhered to safe messaging guidelines. These conversations were facilitated by the relationships and trust that the HCCI staff built with the communities, which is essential to working in NHPI communities.<sup>28</sup> Knowing that face-to-face interactions were essential in building the relationship and trust, the HCCI staff members made numerous air flights to reach geographically dispersed areas across the state. In addition, retreats and webinars were organized to bring the youth leaders groups together to share challenges and ideas with one another.

Prior to receiving the safe messaging training, the youth leaders tended to be drawn to unsafe ideas for community awareness activities that included student assemblies with a large number of people and events that would memorialize people who have died by suicide and used sensational images of suicide methods. Once the youth leaders received the safe messaging training, and engaged in conversations with Community Coordinators and HCCI staff, they began to understand and actively apply the safe messaging guidelines to their community awareness campaign ideas. Examples from three communities that HCCI partnered with are described to illustrate how safe messaging guidelines were incorporated into youth-led community awareness campaigns.

Table 1. Safe and Effective Messaging for Suicide Prevention <sup>26</sup>	
Recommendations for public awareness campaigns:	
The Do's	The Don'ts
<ul style="list-style-type: none"> <li>Do emphasize help-seeking and provide information on finding help, such as National Suicide Prevention Lifeline (1-800-273-TALK [8255]) and local service providers and crisis centers.</li> <li>Do emphasize prevention.</li> <li>Do list the warning signs, as well as risk and protective factors of suicide.</li> <li>Do highlight effective treatments for underlying mental health problems.</li> </ul>	<ul style="list-style-type: none"> <li>Don't glorify or romanticize suicide or people who have died by suicide.</li> <li>Don't normalize suicide by presenting it as a common event.</li> <li>Don't present suicide as an inexplicable act or explain it as a result of stress only.</li> <li>Don't focus on personal details of people who have died by suicide.</li> <li>Don't present overly detailed descriptions of suicide victims or methods of suicide.</li> </ul>

## Examples of youth-led suicide prevention awareness campaigns

*Teens on Preventing Suicide (TOPS)* was created in the Kahuku community on O'ahu (Figure 1). The TOPS youth leaders were concerned by the statistics on youth suicide behaviors from Hawai'i's Youth Risk Behavior Survey (YRBS) and wanted to use these statistics as the basis for educating the public about the importance of youth suicide prevention. They decided to design t-shirts that featured the percentages of Hawai'i's youth who had ever considered suicide (20%) and made a suicide plan (16%).<sup>4</sup> They also included another statistic they learned during their training, which was that 85% of youth considering suicide will tell someone.<sup>29</sup> This was done to emphasize the hopeful message that there is an opportunity to intervene. To reinforce the positive message, the back of the shirt displayed "100% Care." This was the main message of their campaign, which was that the community cares about its members. The National Suicide Prevention Lifeline number (1-800-273-TALK) was also provided on the sleeve of the shirt. The target audience for these shirts was the general community. However, the youth leaders also organized events such as a community walk and a school awareness activity where they developed resource materials for the audience. The TOPS youth leaders wore their t-shirts at all these events, which was immediately recognized by the community. The youth leaders and Community Coordinators reported that the t-shirts created a sense of intrigue among community members and often initiated a positive conversation about suicide prevention, thus decreasing the stigma that is typically associated with this topic.

Two youth groups were formed in Hilo, which were OLA (which means "life" in Hawaiian) and SPA (Suicide Prevention Awareness). Similar to the TOPS youth leaders, the OLA youth leaders also created a t-shirt campaign that integrated a hopeful life-affirming image. They also participated in various advocacy

efforts in the community including sign-waving campaigns with the police department and proclamation signing for Suicide Prevention Week with the Mayor of Hilo. These efforts led to funding being provided for the youth leaders to participate in various suicide prevention trainings and conferences around the State. The SPA youth leaders conducted a self-care wellness fair at their school, where they distributed positive messages that promoted help-seeking behaviors and suicide prevention information and resources, including the National Suicide Prevention Lifeline number.

Maui Economic Opportunity's youth suicide prevention leaders, M.A.U.I. (Making An Unforgettable Impact) Kanak-tion, hosted two community awareness events in Kahului. Youth wanted to raise awareness about youth suicide while sharing information on the warning signs and following safe messaging guidelines. The events also focused on the importance of taking care of oneself and promoted hopeful messages around mental wellness. Their first event, a Care-nival, included a variety of game booths where participants could learn more about suicide prevention. Youth leaders also identified myths and facts about suicide prevention to share at each booth. In their second event, GLOW (Go Lighten Our World), they highlighted the struggles of dealing with suicide by creating an obstacle course. Participants engaged in role plays that promoted help-seeking behaviors and allowed them to practice how they could appropriately and compassionately respond to someone who may need mental health support. At both events, they provided the National Suicide Prevention Lifeline number on wallet cards with warning signs, and lists of local resources.

There are many more examples of youth-driven suicide prevention awareness activities that are published elsewhere. For instance, youth leaders from Kauai named *Kaua'i Leaders Against Suicide* (KLAS) conducted a series of community awareness activities, including a radio public service announcement.<sup>14</sup>

Youth leaders from Moloka'i named *Suicide Prevention Across Moloka'i* (SPAM) also conducted community events that integrated the strengths and cultural traditions of their tight-knit community.<sup>30</sup>

## Community Impact and Future Directions

During HCCI's three-year project period, the six youth leader groups developed and implemented a total of 31 community awareness activities. By counting the number of people in attendance at their events and estimating media readership and listenership, it is estimated that these youth-led awareness activities have reached over 643,000 people throughout the state of Hawai'i. Efforts are currently underway to evaluate the impacts of these activities on suicide risk and stigma reduction. Although the funding for HCCI has officially ended, the partnerships created by HCCI have



Figure 1. The TOPS youth leaders of Kahuku at their community walk for suicide prevention

led to a series of collaborative efforts across the State to coordinate and sustain youth engagement and leadership in suicide prevention. For example, a Youth Leadership Council has been formed, which not only includes members from the original six communities that HCCI worked with, but also includes youth from other communities who have been touched by the HCCI community awareness activities. This Council provides a youth voice to the statewide Prevent Suicide Hawai'i Task Force to inform policy, research, and community awareness activities. In addition, the Council youth leaders engage in ongoing training in suicide prevention and mental health as well as serve as advocates for community awareness.<sup>34,35</sup>

Increasing the awareness of youth suicide prevention as a public health concern is important to advance the overall wellness of our communities. Engaging youth as active partners in youth suicide prevention activities is promising because youth serve as important role models for their peers.<sup>31</sup> However, these efforts must be cognizant of and align with safe messaging guidelines to avoid the possibility of unintentionally increasing the risk of suicide for those who may be facing mental health challenges. Resources for applying safe messaging guidelines for all types of communications about suicide, such as educational materials for the public, social media, newsletters, website content, event publicity, and public talks are growing, but more are needed. For example, the Framework for Successful Messaging by the Action Alliance for Suicide Prevention provides guidance to strategically promote hope, offer help, and increase resilience via all public messaging about suicide in a safe way.<sup>33</sup> The HCCI project demonstrates that program implementation can be youth-driven while adhering to evidence-based practices of suicide prevention. Using a youth leadership model may enhance prevention strategies to address persistent health disparities in minority communities.<sup>32</sup>

## Acknowledgements

Mahalo to the youth leaders, community partners, and university staff of the Hawai'i's Caring Communities Initiative for their dedication to suicide prevention and mental wellness. Special thanks to Dynaka Merino and Annette Valjorma-Hunter for their inspiring work with the TOPS youth leaders. This manuscript was developed, in part, under grant number 1U79SM060394 from the Substance Abuse and Mental Health Services Administration (SAMHSA). The views, opinions and content of this publication are those of the authors and contributors, and do not necessarily reflect the views, opinions, or policies of CMHS, SAMHSA, and U.S. Department of Health and Human Services, and should not be construed as such.

### Authors' Affiliations:

- University of Hawai'i at Manoa, Department of Public Health Sciences and Department of Psychiatry, Honolulu, HI (JJC-D, DAG, KB, JS-M)  
 - Hawai'i's Caring Communities Initiative, Honolulu, HI (JJC-D, DAG, KB, JS-M, JB-K, DK, LL, LW)

## References

1. US Department of Health and Human Services [DHHS]. 2012 National Strategy for Suicide Prevention: Goals and Objectives for Action. Washington, DC: DHHS;2012.
2. US Public Health Service. The Surgeon General's Call to Action to Prevent Suicide. Washington, DC: DHHS;1999.
3. Galanis D. Overview of Suicides in Hawai'i. Presented at: Statewide Prevent Suicide Hawai'i Task Force meeting; 2012; Honolulu, Hawai'i.

4. Centers for Disease Control and Prevention. Youth Online: High School YRBS. <http://nccd.cdc.gov/youthonline/App/Default.aspx>. Accessed April 6, 2016.
5. Else IRN, Andrade NN, Nahulu, LB. Suicide and suicidal-related behaviors among indigenous Pacific Islanders in the United States. *Death Stud.* 2007;31(5):479-501.
6. Yuen NY, Nahulu LB, Hishinuma ES, Miyamoto RH. Cultural identification and attempted suicide in Native Hawaiian adolescents. *J Am Acad Child Adolesc Psychiatry.* 2000;39(3):360-70.
7. Wong SS, Sugimoto-Matsuda JJ, Chang JY, Hishinuma ES. Ethnic differences in risk factors for suicide among American high school students, 2009: The vulnerability of multiracial and Pacific Islander adolescents. *Arch Suicide Res.* 2012;16(2):159-73.
8. Medeiros SM, Tibbetts KA. Ho'omau i nā 'Ōpio: Findings from the 2008 pilot-test of the youth development and assets survey. Honolulu, HI: Kamehameha Schools Research and Evaluation Division;2008.
9. Hirsch JK. A review of the literature on rural suicide: risk and protective factors, incidence, and prevention. *Crisis.* 2006;27(4):189-99.
10. Centers for Disease Control and Prevention. Nonfatal self-inflicted injuries treated in hospital emergency departments: United States, 2000. *Morbidity and Mortality Weekly Report.* 2002;51(20):436-38.
11. Hawai'i Primary Care Association. Hawai'i Primary Care Directory: A directory of safety net health services in Hawai'i. <http://www.hawaiipca.net/media/assets/PrimaryCareDirectory2006.pdf>. Accessed April 8, 2016.
12. Matsu C, Goebert D, Chung-Do J, Carlton B, Sugimoto-Matsuda J, Nishimura S. Disparities in psychiatric emergency department visits among youth in Hawai'i, 2000 to 2010. *J Pediatr.* 2013;162(30):618-23.
13. Berkes F, Ross H. Community resilience: Toward an integrated approach. *Soc Nat Resour.* 2013;26(1):5-20.
14. Chung-Do JJ, Goebert DA, Bifulco K, Tydingco T, Alvarez A, Rehuher D, Sugimoto-Matsuda J, Arume B, Wilcox P. Hawai'i's Caring Communities Initiative: Mobilizing Rural and Ethnic Minority Communities for Youth Suicide Prevention. *J Health Dispar Res Pract.* 2015;8(4):108-23.
15. Sugimoto-Matsuda J, Rehuher D. (2014). Suicide prevention in diverse populations: a systems and readiness approach for emergency settings. *Psychiatric Times.* <http://www.psychiatrictimes.com/cultural-psychiatry/suicide-prevention-diverse-populations-systems-and-readiness-approach-emergency-settings>. Accessed April 8, 2016.
16. Bean G, Baber KM. Connect: An effective community-based youth suicide prevention program. *Suicide Life Threat Behav.* 2011;41(1):87-97.
17. Chung-Do J, Bifulco K, Antonio M, Tydingco T, Helm S, Goebert D. A Cultural Analysis of the NAMI-NH Connect Suicide Prevention Program by Rural Community Leaders in Hawai'i. *J Rural Ment Health.* In press.
18. Antonio M, Chung-Do, J. Systematic review of interventions focusing on Indigenous adolescent mental health and substance use. *Am Indian Alsk Native Ment Health Res.* 2015;22(3):36-56.
19. US Census Bureau. State and County Quick Facts. <http://www.census.gov/quickfacts/table/PST045215/15>. Accessed April 8, 2016.
20. Oliver RJ, Spillsbury JC, Osiecki SS, Denihan WM, Zureick JL, Friedman S. Brief report: preliminary results of a suicide awareness mass media campaign in Cuyahoga County, Ohio. *Suicide Life Threat Behav.* 2008; 38(2):245-49.
21. Jenner E, Jenner LW, Matthews-Sterling M, Butts JK, Williams TE. Awareness effects of a youth suicide prevention media campaign in Louisiana. *Suicide Life Threat Behav.* 2010; 40(4):394-406. doi:10.1521/suli.2010.40.4.394.
22. Etzersdorfer E, Sonneck G. Preventing suicide by influencing mass-media reporting. The Viennese experience 1980-1996. *Arch Suicide Res.* 1998;4(1):67-74.
23. Zenere FJ. Suicide clusters and contagion. *Principal Leadership.* 2009;10(2):12-6.
24. Gould MS. Suicide and the media. *Ann N Y Acad Svi.* 2001;932:200-21.
25. Stack S. Media coverage as a risk factor in suicide. Public health policy and practice. *JEpidemiol Community Health.* 2003;57:238-240 doi:10.1136/jech.57.4.238.
26. Suicide Prevention Resource Center. Safe and Effective Messaging for Suicide Prevention. <http://www.ct.gov/dmhas/lib/dmhas/prevention/cyspi/safemessaging.pdf>. Accessed April 8, 2016.
27. Connect. Telling your own story: best practices for presentations by suicide loss and suicide attempt survivors. <http://theconnectprogram.org/survivors/telling-your-own-story-best-practices-presentations-suicide-loss-and-suicide-attempt>. Accessed on April 8, 2016.
28. Chung-Do J, Look M, Mabello T, Trask-Batti M., Burke K, Mala Mau MKL. Engaging Pacific Islanders in research: community recommendations. *Prog Community Health Partnersh.* 2016;10(1):63-71.
29. Juhnke GA, Granello PF, Granello DH. Suicide, self-injury, and violence in the schools: assessment, prevention, and intervention strategies. Honoken, New Jersey: John Wiley & Sons, Inc; 2011.
30. Chung-Do JJ, Napoli SB, Hooper K, Tydingco T, Bifulco K. Youth-led suicide prevention in an indigenous rural community. *Psychiatric Times.* <http://www.psychiatrictimes.com/cultural-psychiatry/youth-led-suicide-prevention-indigenous-rural-community>. Accessed April 8, 2016.
31. Antonio MA, Chung-Do J, Goebert D, Bifulco K, Tydingco T, Helm, S. A Strength-Based and Youth-Driven Approach to Suicide Prevention in Rural and Minority Communities. Symposium presented at: Society for Prevention Research Conference; May 2015; Washington DC.
32. Guerra NG, Bradshaw CP. Linking the prevention of problem behaviors and positive youth development: Core competencies for positive youth development and risk prevention. *New Dir Child Adolesc Dev.* 2008;122:1-17.
33. National Action Alliance for Suicide Prevention, Action Alliance Framework for Successful Messaging. <http://suicidepreventionmessaging.actionallianceforsuicideprevention.org/>. Accessed on April 2016.
34. Terrell J. 1 in 8 Hawaii Middle Schoolers Say They've Attempted Suicide. *Civil Beat.* <http://www.civilbeat.com/2016/04/1-in-8-hawaii-middle-schoolers-say-they-ve-attempted-suicide/>. Accessed on April 2016.
35. Fujii N. How these Hawai'i Youth Work to Prevent Suicide. *Ka Leo.* [http://www.kaleo.org/news/how-these-hawai-i-youth-work-to-prevent-suicide/article\\_e23c18ec-f527-11e5-b735-6754f5a6ff03.html](http://www.kaleo.org/news/how-these-hawai-i-youth-work-to-prevent-suicide/article_e23c18ec-f527-11e5-b735-6754f5a6ff03.html). Accessed on April 2016.



## Transition from Traditional to Western Medicine in Hawai'i (Part 2) Western Legislative Impacts on Traditional Medical Practices

Helen Wong Smith MLIS, CA

*HJMPH contributing editor of the Daniel K. Inouye College of Pharmacy Scripts column, Carolyn Ma PharmD, BCOP, is a founding faculty member for the Daniel K. Inouye College of Pharmacy and is currently Interim Dean, and Associate Professor and Chair for the University of Hawai'i at Hilo Department of Pharmacy Practice. Dr. Ma is a Board Certified Oncology Pharmacy Specialist with most recent experiences in health systems administration and pharmacy academe.*

### Traditional Medical Practice

Part 1 in the March issue provided an overview of traditional medicine, the dramatic impacts of introduced diseases, and the introduction of Western medicine with its associated pharmaceutical practice. Not surprisingly, the conflict between traditional and Western medicine are reflected in the courts and laws of the five governments of the islands (monarchy, provisional, republic, territory, and statehood). Part 2 provides the pivotal laws regarding the practice of traditional medicine in Hawai'i.

Practitioners of traditional medicine founded on centuries of evidence-based analyses were established professionals in Hawai'i. Increasing Western influence on such cultural practices triggered inconsistent laws for over a century. Legal violation for practicing medicine for compensation without government sanctions was first articulated in the 1865 Civil Code:

It shall not be lawful for any person to practice in this kingdom as a physician or surgeon, for compensation or reward, unless he shall have first presented to the board of health...satisfactory evidence of his professional qualifications...obtained a certificate of approval from said board, and a license from the minister of interior.... liable to a penalty of \$100 for each offense.<sup>1</sup>

While one of the purposes of this law was to protect the public from persons fraudulently claiming to be *kahuna*, [the different types of *kahuna* were covered in Part 1 of this paper] it also set up an obstacle for all legitimate practitioners, requiring them to go through a licensing process to practice. There is no record of the government issuing licenses to *kahuna* at this time.<sup>2</sup> Two years later a petition from J. Ka'ai of Kanahonua, Hamakua to "practice medicine" was refused by the Board of Health. On June 1, 1868 a motion to allow traditional Hawaiian practitioners to practice passed. One legislator argued:

Hawaiians were all dying under the influence of foreign medicine. If a man died under a native doctor, the doctor would probably be taken up for murder. No one could deny that natives had died at the Queen's Hospital. – Mr. Keawehunahala.<sup>3</sup>

Act 139 establishing a Hawaiian Board of Health, *Papa Ola Hawai'i*, was signed by Kamehameha V on June 24, 1868.

This board licensed Hawaiian practitioners requiring a written record of all treatments. A native practitioner by the name of Waiwai was fined \$100 after the following testimony was given, "After dousing feverish sickly patient with water inside and out, and praying for the better part of the week the patient coughed blood but died. Waiwai appeared in court in a white duster, red vest, white lace & [illegible] scarf, wide white belt with silver buckle and a cross-engraved on his breast. He also carried a large bible."<sup>4</sup>

Between 1873 and 1878 fourteen Native Hawaiians passed the Board's test and became licensed to practice traditional healing. The Hawai'i State Archives holds five record books the licensed *kahuna* kept including one belonging to G.W.D. Halemanu of Hamakua who held several government positions including private ways and water rights agent, road supervisor, commissioner of fences and a member of the House of Representatives.<sup>5</sup>

In October 1886, King Kalakaua appointed five more board members to *Papa Ola Hawai'i* and established local boards to report on "the qualifications of applicants to practice native medicine; and to state if the remedies proposed are suitable cures."<sup>6</sup> It is reported during Kalakaua's reign, three hundred *kahuna* received licenses.<sup>7</sup>

Unsurprising, this licensure was condemned by Western influences. An 1891 article stated:

...All that talent, training and charity together can do is at hand, free and without price and yet the death rate of the aboriginal race is to the foreigners as to...Kahunadom must be discredited, and then it may die out. It cannot be stamped by force unless it was possible to convict a dozen or so of kahunas of manslaughter It is to be feared however that the Hawaiian race will die out...<sup>8</sup>

The Republic of Hawai'i formed on July 4, 1894 eighteen months after the illegal overthrow of the Hawaiian Kingdom repealed all Kingdom laws. The Honorable Solomon Kawaihoa of Puko'o Moloka'i introduced a bill on March 19, 1901 authorizing the *kahuna* to practice medicine in the Territory.<sup>9</sup> Not only did this bill fail, Act 48 in 1905 outlawed *kahuna* with

punishment through fines or imprisonment.<sup>7</sup> The 1919 session produced two significant bills recognizing traditional practices; Act 193 - Authorizing the President of the Board of Health to issue permits to any duly qualified person to administer and use medicines of Hawaiian herbs and plants grown in the Territory of Hawai'i; and Act 195 - Purpose of Investigating the Medicinal Properties and Values of Herbs and Plants grown in the Territory of Hawai'i. Act 193 allowed:

*...which applicants shall state the name and address of the applicant, his nationality, and his experience in the use of Hawaiian herbs and plants. It also provides that the application shall be accompanied by affidavits signed by three disinterested persons who shall state that, to their best knowledge and belief, the applicant is an expert in the use and practice of Hawaiian herbs.<sup>10</sup>*

Although the 1919 Territorial legislature authorized a Hawaiian Medicine Board to issue licenses to herbalists, two of the three board members were *haole* (Caucasian) who required the *kanaka* (nvs. human being, used as term for native Hawaiian) applicants to know Latin names for native plants in the certifying examination. This law evolved into Chapter 65 of the Revised Laws of Hawai'i and remained so until 1965 when the State Legislature repealed it as an "obsolete law."<sup>2</sup> Those who applied for recognition under this Act included:

- 1933 – Hans A. Bode, Elias Liko Jones, Alexander K. Ka'onohi, Joseph Mokihana Sarch
- 1940 – Application by James Isaacs
- 1944 – Possibility of revoking license of E.L. Jones
- 1945 – Bode, Jones and Ka'onohi
- 1948 – Mrs. Luka G. Kinolau
- 1951 – William K. Maniua of Hilo who failed the exam<sup>5</sup>

One example of a Native Hawaiian traditional healer renowned in the community for her healing abilities but unable to obtain a medical license was Luka Kinolau of Kohala, Hawai'i. Mrs. Kinolau was born circa 1887 and was taught by her grandmother, a *kauka lapa'au*, or "herbal doctor," *haha*, or "diagnosis." In 1948, Kinolau went before the Board of Examiners to become licensed as a Hawaiian healer. Kinolau spoke only Hawaiian, and a translator was present, one of the three parts of the examination required Kinolau know the Latin names of the Hawaiian plants she used for medicine. Kinolau failed her examination, having received a "0" for this part of the exam. Kinolau appealed the Board's decision and challenged the nature of the examination, but the Board upheld its decision to deny Kinolau a license.<sup>2,5</sup>

In 1965 the Hawaiian Medical Board was abolished and *kanaka* herbalists were no longer recognized through Act 153. However, *lomilomi* practitioners were certified by the Board of Massage.<sup>11</sup> *Lomilomi* practitioner, attorney, and author Makana Risser Chai noted in an March 15, 2015 email to author Wong Smith, the full scope of *lomilomi* practice is not included in massage and many practitioners do not apply for licensing—or failed licensing—due to lack of western concepts and terms of anatomy.

The resurgence of interest in Native Hawaiian culture and rights impacted traditional healing and *kahuna* were again permitted to practice legally in 1973.<sup>12</sup> The following year the Native Hawaiian Health Improvement Act was enacted.<sup>13</sup> In 1985 the results of "E Ola Mau" a federally funded study was reported at the first Native Hawaiian Needs Study Conference prompting the introduction of a Bill to the U.S. Congress which passed the Native Hawaiian Health Care Act (NHHCIA Pub. L. No. 100 579, § 5(b), 102) in 1988.<sup>14</sup> Two years later the NHHCIA allowed for the creation of Papa Ola Lokahi establishing nine health care systems in a "culturally appropriate manner."<sup>13</sup> NHHCIA also recognized traditional Hawaiian healers played an important role in maintaining the health of Native Hawaiians: A practitioner . . . who . . . is of Hawaiian ancestry, and . . . has the knowledge, skills, and experience in direct personal health care of individuals, and . . . whose knowledge, skills and experience are based on a demonstrated learning of Native Hawaiian healing practices acquired by . . . Direct practical association with Native Hawaiian elders, and . . . oral traditions transmitted from generation to generation."<sup>15</sup>

In 1998 following several meetings of practitioners, Act 162 referred to as the "Healer's Law," called for the formation of a council "to decide such issues as who will be allowed to practice Native Hawaiian healing arts, how they will be licensed or approved, how they will be compensated."<sup>16</sup> Act 162 exempted Native Hawaiian practitioners from state licensure for practicing medicine for two years until July 1, 2002 to enable public discussion. It did not delineate the certification process, and with subsequent feedback from the community, the law was amended several times in an attempt to create a culturally appropriate structure for certification. The Healers' Law assigns certification to the traditional Hawaiian healing community with several councils across the State determining their own criteria. This is in contrast to previous attempts at credentialing, which put the government in charge of determining standards.

There remained confusion as even members of the Hawai'i Board of Medical Examiners were under the impression that traditional Hawaiian healers could practice medicine without a license. On January 25, 2001 Papa Ola Lokahi (POL) introduced "The Kahuna Statement" to the State legislature as Senate Bill 1390 enacted as Act 304 enabling POL to form panel(s) to be convened and exempting practitioners from liability under medical licensing laws.<sup>17</sup> However, it also persisted in requiring certification for those wanting to practice while qualifying for the exemption.<sup>2</sup> In 2004 Act 153 made each council independent of state government: "Nothing in this chapter shall limit, alter, or otherwise adversely affect any rights of practice of traditional Native Hawaiian healing pursuant to the Constitution of the State of Hawai'i."<sup>18</sup> Amendments to Act 153 in 2005 allowed Native Hawaiian Health Centers formed under NHHCIA to petition Papa Ola Lokahi for recognition of their *kupuna* panels (later referred to as Kupuna Councils). A significant amendment eliminated the requirement that three members of the certification panel have Native Hawaiian ancestry; however this requirement was reinstated in 2009.<sup>19</sup>

Babbette Galang, Traditional Healing & Complementary Health Director for Papa Ola Lokahi stated in a March 10, 2015 email:

The [Wa'ianae] NHTHC is not the only council to “recognize” traditional healers. (they may use the word “certify” but we do not). All of the five Native Hawaiian Health Care Systems statewide have recognized Kupuna Councils working on how to incorporate traditional healing services to the clients of their Systems while at the same time maintaining the “cultural integrity” of these practices. They, not POL make decisions for their Systems, for their islands, for their communities. The NHTHC is not part of the POL Systems. They are an independent community health center with an independent Kupuna Council recognized by POL.

In 2014, a State auditor’s report titled *Sunrise Analysis: Regulation of Herbal Therapists*, found regulation of herbal therapists unwarranted:

We found that the proponents of herbal therapy regulation have not provided any evidence of harm or abusive practices by herbal therapists in Hawai‘i or elsewhere. Further, the proponents of SB No. 2439, a younger generation of traditional Native Hawaiian healers, are the primary beneficiaries of regulation, hoping to attain state licensing in order to practice their art without going through a kupuna council recognition process. However, placing the licensing of Native Hawaiian healers under state control is in direct contravention to the purpose and intent of Act 162, SLH 1998, which exempted Native Hawaiian healers from all requirements under the state’s medical licensing law.<sup>20</sup>

Currently only Aloha Care, Hawai‘i’s third largest insurance provider, covers some Native Hawaiian healing services under its health and wellness program.

Based on the 2014 Sunrise Analysis it is likely licensing and recognition will remain under the purview of the Kupuna Councils of the Native Hawaiian Health Care Systems.

Author’s Affiliation:  
Former Pharmacy & Health Sciences Information Resource Coordinator at the Daniel K. Inouye College of Pharmacy, Hilo, HI; and currently the Executive Director of the Kaua‘i Historical Society, Lihue, HI.

## References

1. 2 Civ. Code of The Hawaiian Islands § 7(5)(278-9) (1865).
2. Donlin AL. When all the Kahuna are Gone: Evaluating Hawaii’s Traditional Hawaiian Healers Law. *Asian-Pacific Law & Policy J.* 2010; 12(1).
3. *Hawaiian Gazette.* June 24 1868.
4. *Pacific Commercial Advertiser.* June 3 1871.
5. Chun MN. *It might do good: the licensing of medical kahuna.* Honolulu: First People’s Productions; 2009
6. Section 7 Laws of his majesty Kalakaua King of the Hawaiian Islands passed by the legislative assembly at its session 1886.
7. Chun, MN. *Ka mo’olelo laikini la’au lapa’au = the history of licensing traditional native practitioners.* Honolulu: Health Promotion and Education Branch, Hawaii State Dept. of Health, [1989].
8. *Hawaiian Gazette.* February 10, 1891.
9. Territory of Hawaii 1901, 152.
10. Territory of Hawaii 1919, 193
11. Hawai‘i Revised Laws Chap 63.
12. State Penal Code Title 37, Chapter 773
13. Hope B, Hope JH. Native Hawaiian Health in Hawaii: Historical Highlights. *California J Health Promotion.* 2003; Special Issue 1-9.
14. Casken J. *Bringing culture into health? : the Native Hawaiian Health Care Act of 1988.* [Doctoral dissertation]. Honolulu, HI: University of Hawaii at Manoa; 1994.
15. (Pub. L. 100–579, §12, Oct. 31, 1988, 102 Stat. 2923 ; Pub. L. 100–690, title II, §2312, Nov. 18, 1988, 102 Stat. 4230 ; Pub. L. 102–396, title IX, §9168, Oct. 6, 1992, 106 Stat. 1948 ; Pub. L. 111–148, title X, §10221(a), Mar. 23, 2010, 124 Stat. 935.)
16. HRS section 453-2(c).
17. Baclayon KKP. *E ku makani: A “Life History” story of kahuna la’au lapa’au Levon Ohai.* [Masters Thesis]. Honolulu, HI: University of Hawaii; 2012.
18. *Traditional Hawaiian Healing Practices.* S.B. 1285; 2005. [http://www.capitol.hawaii.gov/session2005/bills/SB1285\\_cd1\\_.htm](http://www.capitol.hawaii.gov/session2005/bills/SB1285_cd1_.htm)
19. Papa Ola Lokahi. *Chronology of events relating to traditional healing practices since 1985.* <http://www.papaolalokahi.org/wp-content/uploads/2015/01/Chronology-of-Policy-Events-related-to-Traditional-Healing-2015.pdf>
20. Hawaii. Legislature. Office of the Legislative Auditor. *Sunrise Analysis: Regulation of Herbal Therapists.* Honolulu, HI : The Auditor, State of Hawai‘i, [2014] Report No. 14-14, December 2014.





## NURSING, NO. OUR PROGRAM IS FILLED.

It appeared to be a legislative slam-dunk for California state Senator, Democrat Marty Brock. State colleges are turning away applicants for their nursing programs because they are filled. Meantime many hospitals are refusing to hire new nurses without bachelor's degrees. By allowing certain community colleges to grant BAs to help provide nurses the gap would be eased. Senator Brock promptly got a message from four-year schools that he was treading in their territory, and they would decide who will grant degrees. This scenario is occurring across the United States as schools spar over who should be responsible for educating today's nurses. Rather than let his bill die, Senator Brock removed that portion. Now certain community colleges can grant BAs in ranch management and mortuary sciences.

## AEDES AEGYPTI, A PEST YOU CANNOT ERADICATE.

The medical all-stars we have come to rely on for advice, therapy and protection are in a desperate struggle to control the "cockroach of mosquitoes" the *Aedes aegypti*. It is the primary agent carrying Zika virus, dengue, and chikungunya. This epidemic of viral infections is currently sweeping the tropics from Africa westward to Australia. It thrives around people, especially in densely packed neighborhoods. It is a diurnal creature feeding during the day and hiding at night. It likes dark corners under beds or in closets, and lays eggs in any pool or puddle of water, even plant leaves. These habits make it the toughest mosquito to eliminate. Mass nighttime spraying doesn't get to them, and spraying inside of homes is a contentious practice. DDT is effective but banned in Brazil and the United States. Moreover, the mosquito becomes resistant to pesticides with time and exposure. Oxitec a US based subsidiary of a United Kingdom biotech company is managing a genetically engineered *Aedes aegypti* mosquito in the Brazilian city of Piracicaba, a dengue hot spot. Their techs insert a gene in male mosquitoes that causes their offspring to die. They claim this approach has reduced *Aedes* population by more than 90% in some field trials. Others have said the use of DDT should not be ruled out given the scale of the current epidemic. Lawrence Gostin, an expert in public health law at Georgetown University Law Center, said, "Opposition to DDT is largely from privileged northerners who aren't dying of mosquito borne illnesses." Amen to that.

## GREEK GODS MIGHT FEEL RIGHT AT HOME AT THIS OLYMPUS.

Lavish meals, winery tours, golf and spa treatments, trips to Japan, and, of course, consulting fees added on (shucks, somehow they missed me); all this offered by senior employees and executives of Olympus as kickbacks to hospitals and doctors for promoting sales of its medical devices. Charges were brought by the US attorney's office for the District of New Jersey. The feds alleged the bribes caused health care providers to bill government health care programs in violation of the False Claims Act. Olympus admitted their sins and agreed to pay \$623.2 million in civil and criminal penalties as part of the largest-ever settlement under the anti-kickback laws. The company also admitted giving cash grants and equipment loans to hospitals with the intent of retaining business ties and winning new contracts. Yes, they paid the penalties, but the equipment is in place and in constant use, so the cash flow to Olympus will surely continue. And what about the hospital executives and physicians who were recipients of all this largesse? Why is it acceptable to punish the hooker, but the johns get a free ride?

## SOME SINS COME LOOKING FOR YOU.

Maria Sharapova, the beautiful blond Russian tennis super-star was taking meldonium for 10 years on her doctor's prescription. In September 2015 the World Anti-Doping Agency (WADA) added the drug to the list of banned substances. Sharapova was informed by e-mail in December of the change effective January 1, 2016, but she failed

to read it. When she tested positive, she was surprised but promptly admitted her oversight. The five-time International Tennis Federation (IAF) champion said, "I made a huge mistake. I don't want to end my career this way and I really hope I will be given another chance to play this game." The IAF suspended her from competition pending a full determination of her case. Electronic mail is a casual way for WADA to advise athletes on banned drug changes.

## ZIKA — NATURES OWN THALIDOMIDE.

Zika virus is related to yellow fever, dengue, Japanese encephalitis and west Nile viruses. The name comes from Uganda where it was first found in 1947. Zika infections extend in a narrow tropical band from Africa to Asia, and is often a mild episode treated with rest. It seems fairly innocent, but not so. Zika infection during pregnancy appears to be related to newborns with undersize heads and brains, causing microcephaly. Brazil has become the epicenter for the Americas with spread to Colombia, Puerto Rico and other US territories. The New England Journal of Medicine recently published documentation of serious problems in the third trimester for women who had Zika at some time during their pregnancy. Reports of people ill with Zika in numbers that have surprised the Centers for Disease and Control and Prevention (CDC), illustrate the challenges with travel to some tropical areas. An additional startling report to the CDC was the finding of Zika infection possibly through sexual contact. Moreover, a report in Lancet confirmed a link between Zika and Guillain-Barre syndrome. The study identified 42 patients who developed Guillain-Barre during an outbreak of Zika in French Polynesia in 2013 and 2014. There is much more to this virus action than a narrow belt across the tropics.

## DON'T LET STRESS RUIN YOUR DAY.

The next time you confront a critical delay, or have an argument with a superior or colleague or exchange heated words with your spouse or significant other, hit the gym. Emotional stress causes the autonomic nervous system to release adrenaline and cortisol, and blood pressure goes up, heart rate increases, mental acuity often goes haywire. Dr. Brad Roy at the Summit Medical Center in Kalispell, Montana, says exercise stimulates the release of endorphins and neurotransmitters that help relieve the stress response. Moreover, exercise is a form of meditation that takes your mind away from the emotional factors. The best exercise depends on what the individual enjoys, such as jogging, weight lifting, or it could be the guitar or piano. Whatever puts your mind in comfortable limbo.

## DON'T TRY TO BEND THE RULES IN JUDGE KIRK'S COURT.

In a sentence for contempt of court, attorney Michael Peterson was ordered by Judge Philip Kirk to inform every client he acquires in the following twelve months that he, Peterson, is a "liar, cheat, thief and crook" The judge had determined that Peterson had fabricated a plea agreement with supporting documents to convince his client to plead guilty to armed robbery. The prosecuting attorney denied making any such agreement. After delivering a scathing lecture to attorney Peterson, Judge Kirk added, "I don't want you to have any more business than a pimp in a nursing home."

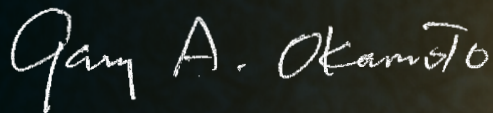
## ADDENDA

- Research of the "Annals of Surgery" noted that the percentage of women who elected contralateral prophylactic breast surgery tripled between 2002 and 2012.
- Success is merely one achievement that covers up a multitude of blunders.
- World's best selling cookie – Oreo.
- Most of our future lies ahead. Kentucky basketball coach.
- The perfect lover turns into a pizza at 1:00 AM.
- Never buy a computer too big to throw out the window.

## ALOHA AND KEEP THE FAITH rts

*(Editorial comment is strictly that of the writer.)*

# MIEC Belongs to Our Policyholders!



**Gary Okamoto, MD**  
**Board of Governors**



## Philosophy Is Important

MIEC is now the only medical professional liability insurance carrier distributing dividends in Hawaii. Join the company whose philosophy puts policyholder-owners first.

For 40 years now, 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.

### Added value:

- No profit motive and low overhead
- Local Honolulu claims office
- Dividends for a **TEN year average savings of 31.4%\***

### For more information or to apply:

- [www.miec.com](http://www.miec.com)
- Call 800.227.4527
- Email questions to [underwriting@miec.com](mailto:underwriting@miec.com)

\* 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](http://www.miec.com)

UCERA\_ad\_12.28.15

**MIEC**

Owned by the policyholders we protect.