

Imi Ho'ola: An Educational Model for Disadvantaged Students at the University of Hawai'i School of Medicine

Nanette L. K. Judd, PhD, MPH, RN*

Karen K. Sakamoto, MS

Earl S. Hishinuma, PhD

Chessa DeCambra, MBA

Agnes R. Malate, MEd

*Dr. Judd is associate chair of the Pre-Clinical Medical Education Core and director, Imi Ho'ola Post-Baccalaureate Program, Department of Native Hawaiian Health, University of Hawai'i John A. Burns School of Medicine; Karen Sakamoto is assistant specialist and learning specialist for the Imi Ho'ola Post-Baccalaureate Program and the University of Hawai'i John A. Burns School of Medicine; Dr. Hishinuma is professor and associate chair of research, Department of Psychiatry, University of Hawai'i John A. Burns School of Medicine and principal investigator for the Asian/Pacific Islander Youth Violence Prevention Center; Chessa DeCambra is program assistant for the Imi Ho'ola Post-Baccalaureate Program, University of Hawai'i John A. Burns School of Medicine; and Agnes Malate is senior program officer, Asia Pacific Leadership Program, East-West Center. * Corresponding Author. Correspondence and requests for reprints should be addressed to: Dr. Nanette L. K. Judd, Imi Ho'ola Post-Baccalaureate Program, University of Hawai'i John A. Burns School of Medicine, 651 Ilalo Street, Honolulu, HI 96813, e-mail (judd@hawaii.edu).*

Abstract

This paper describes an educational model that provides opportunities in medicine to students from disadvantaged backgrounds that have a commitment to serve in areas of need, and it presents guidelines on how this model could be adapted to various settings. From 1973 to 2002, the Imi Ho'ola Program (Hawaiian for "Those Who Seek to Heal") of the University of Hawai'i John A. Burns School of Medicine (JABSOM) has provided opportunities in medicine to 379 students from disadvantaged backgrounds. In 1995-1996, Imi Ho'ola underwent a transformation from a pre-medical enrichment program to a post-baccalaureate program that included provisional acceptance and financial support into JABSOM for students who successfully completed the program. As a result, the acceptance rate increased from 47.6% to 98.0%. In addition to provisional acceptance to JABSOM and financial support, the program's educational model incorporates five components: 1) JABSOM's commitment to the program; 2) curricula and learning process; 3) faculty and staff; 4) student assessment and evaluation; and 5) positive learning environment. The key factors of the program's success include: 1) school's commitment and the institutionalization of the program; 2) emphasis placed on a comprehensive approach and the implementation of a curriculum and learning process that are aligned with JABSOM curricula; 3) faculty and staff who support the instructional methodology and work as a team to address students' needs; 4) assessment of students and systematic feedback regarding individualized education plans and academic and non-academic progress; and 5) a positive learning environment for students. Guidelines are provided in this article for consideration in adapting this educational model to other academic settings. (PHD 2007 Vol 14 No 1 Pages 57 - 65)

Introduction

Premedical enrichment and pre-admissions programs designed to increase the pool of underrepresented minority (URM) and socio-economically disadvantaged applicants in medicine have been in existence for decades and have had to address important issues such as affirmative action.^a Their successful and diverse approaches have been reported in medical education publications.^b Currently, there are over 100 post-baccalaureate programs,^c of which, two stand

as national hallmarks: 1) Wayne State University School of Medicine's^{d,e} post-baccalaureate program, which was the first such program in the U.S.; and 2) Southern Illinois University School of Medicine's post-baccalaureate Medical/Dental Education Preparatory Program (MEDPREP).^{f,g} Both programs enrolled URM students from educationally and/or economically disadvantaged backgrounds. These individuals needed assistance to improve their basic science knowledge, learning/study skills, and test-taking strategies in order to be admitted to medical school and to subsequently succeed in various courses and skill areas required of medical students.

In describing Wayne State University's post-baccalaureate program, Whitten⁵ reported the continuing need for increased numbers of URMs in medical schools

and in the profession. He expressed the importance of providing financial assistance and guarantee of admission to medical school as a means to address the shortage of URMs in the profession.

The second post-baccalaureate program, MEDPREP at Southern Illinois University School of Medicine reported by McGlenn⁷ and Jackson⁶ enrolled students of economically and educationally disadvantaged African American, Hispanic, mainland Puerto Rican, and Native American ancestry. It was found that the strengths included: (a) designated teaching faculty; (b) high expectations of student success; (c) individualized student curricula; (d) extensive academic and personal counseling (including assistance with basic learning and study skills, Medical College Admissions Test (MCAT) preparation, upper-level science classes, seminars on the medical school admissions process, an emphasis on problem solving and active learning); (e) fully equipped, centralized facility where faculty could interact with

students; (f) professional and social involvement of students with faculty, medical students and professionals in healthcare facilities; (g) involvement in on-going community service projects; and (h) regular monitoring of progress focused on individualized curriculum that enables the students to stay on track and to matriculate into medical school.

Despite the existence of over 100 post-baccalaureate programs, there remains a shortage in the number of physicians from minority backgrounds, especially underrepresented Native Hawaiian physicians. The lack of these physicians impacts negatively on communities and educational institutions.¹ At the community level, patients are not accessing healthcare services due to lack of consideration of their social-cultural backgrounds, which may impact morbidity and mortality negatively. Additionally, there are a small number of physicians who can serve as role models to make medicine a possible

Table 1

Description of Students of the Imi Ho'ola Program Based on Time Period, Ethnicity, Gender, Acceptance, and Age (N = 379)

Time Period		Gender		Accepted		Age (in years)		n
		Male	Female	No	Yes	Mean	(sd)	
1973-1994	Chamorro	13	5	5	13	23.5	(3.00)	18
	Chinese/Japanese	6	9	6	9	25.3	(3.52)	15
	Filipino	36	40	46	30	24.1	(3.27)	76
	Micronesian	33	10	32	11	24.5	(1.93)	43
	Native American Indian	4	1	1	4	28.0	(2.45)	5
	Native Hawaiian	64	40	46	58	25.4	(3.99)	104
	Samoan	27	11	22	16	24.8	(2.83)	38
	Vietnamese/Cambodian/Laotian	8	2	5	5	24.8	(2.35)	10
	Other*	1	3	1	3	26.8	(4.35)	4
Total	192	121	164	149	24.5	(2.82)	313	
%	61.3%	38.7%	52.4%	47.6%				
1996-2002	Chamorro/Micronesian	3	0	0	3	23.0	(3.46)	3
	Chinese/Japanese	2	4	0	6	26.2	(4.83)	6
	Filipino	10	11	1	20	24.7	(3.31)	21
	Native American Indian	0	3	0	3	24.7	(2.89)	3
	Native Hawaiian	13	11	0	24	25.8	(3.31)	24
	Samoan	3	0	0	3	29.0	(4.00)	3
	Vietnamese/Cambodian/Laotian	1	5	0	6	24.2	(3.76)	6
	Total	32	34	1	65	25.4	(3.80)	66
%	48.0%	52.0%	2.0%	98.0%				
Total	224	155	165	214	24.8	(3.38)	379	
%	59.1%	40.9%	43.5%	56.5%				

*Other: Caucasian, Hispanic

career choice for students from these underrepresented backgrounds. At the institutional level, without URM faculty, there is less chance for the development and implementation of culturally appropriate curricula and instruction that address the cognitive and learning styles of students from diverse backgrounds. Without such faculty, there are also decreased opportunities for positive role modeling (e.g., URM faculty as teachers or preceptors) in medical school.

IMI HO'OLA PROGRAM

History

Imi Ho'ola (Hawaiian for "Those Who Seek to Heal") was established at the John A. Burns School of Medicine (JABSOM), University of Hawai'i (UH) in 1972 under the leadership of Dean Windsor Cutting and subsequently, Dean Terrence Rogers. The school felt it was important to provide access to medical education for disadvantaged students, and was fully committed to this venture. Imi Ho'ola's first class of 15 students began in 1973. Funding was initially provided by the U. S. Public Health Service to recruit applicants who had the potential for a career in medicine. The early success of the program is attributed to the passion and visionary leadership of Dr. Benjamin Young, one of the few Native Hawaiian physicians at the time. Since then, funding has been provided by various federal and state agencies, community health systems, grass-root organizations, and private donations.

For the past 30 years, the Imi Ho'ola Program has been assisting underrepresented and disadvantaged students to qualify for and complete the MD program at JABSOM. One hundred forty-nine Imi Ho'ola alumni have graduated from medical school and are in practice or residency training in Hawai'i, the Pacific and the U.S. continent. The mission of the program is to improve healthcare in Hawai'i and the Pacific Basin by increasing the number of physicians through an educational program that addresses disadvantaged students' academic and social-emotional needs in an effort to increase diversity in the medical profession.

Overview

The first two decades of the Imi Ho'ola Program had an admissions policy that was different from the last six years. The program began

as premedical enrichment and its primary focus was preparing participants to apply to JABSOM. In 1989, JABSOM instituted a Problem-Based Learning (PBL) curriculum, which is student-centered, problem-based, and active learning. As a result, Imi Ho'ola began to align its curriculum and learning process to the PBL method at JABSOM. Beginning with the 1996-1997 class, the program underwent a significant transformation and became a post-baccalaureate program due to federal funding preferences. Part of this change resulted in provisional acceptance into JABSOM for students who successfully completed the program. The acceptance rate increased from 47.6% to 98.0%.

As Table 1 illustrates, Imi Ho'ola has provided educational opportunities to 379 students from disadvantaged backgrounds. Eighty-seven percent of the participants are Native Hawaiians, Filipinos, and individuals from the U.S. Affiliated Pacific Islands (i.e., American Samoa, Guam, Commonwealth of the Northern Mariana Islands [CNMI], the Republic of the Marshall Islands [RMI], the Republic of Palau, and the Federated States of Micronesia [FSM]). The average age of the participants is 24.8 years and the majority are male (59.1%). The overall acceptance rate to medical school shows that of the 379 participants in the program, 214 (56.5%) students were accepted into JABSOM.

The Imi Ho'ola Program was developed with the unique cultures and environments of Asian-Pacific Islanders in mind, as illustrated in Figure 1.^h The geographical area of Guam, CNMI, RMI, Palau, and the FSM covers an area as large as the entire U.S. and the total land mass is only one-half the size of Rhode Island. UH JABSOM is the only U.S. accredited medical school in the Pacific

Figure 1. Map of Pacific Illustrating the Geographic Area Served by JABSOM⁸



that serves this expansive area. The program's faculty and support staff are from multi-cultural backgrounds of the Pacific Region.

Post-Baccalaureate Program Description

The Imi Ho'ola post-baccalaureate program started in 1996. Since then up to 10 individuals are selected each year to participate in an intensive 12-month curriculum. Upon successful completion of the program, students matriculate into JABSOM as first-

year medical students. Imi Ho'ola's educational model emphasizes the instruction and integration of concepts and principles in natural and social sciences plus the humanities, and aligns itself with JABSOM's learning process and teaching methods. This familiarizes the student with the academic expectations of JABSOM upon matriculation and prepares them for success on through medical school graduation. To encourage a focus on academics, students are provided financial support through a stipend.

Table 2. Imi Ho'ola Program

Program Components	Description	Time-Line	Outcomes
Recruitment	Target students from disadvantaged backgrounds who are committed to serve in areas of need in Hawai'i and the U.S. Affiliated Pacific Islands.	Annual year-round, systematic presentations and outreach at high schools, colleges, universities, and communities in Hawai'i and the Pacific. Application deadline in December.	Number of applicants accepted into the program.
Selection & Admission	Three-stage selection process occurs: 1) Applicants screened for ties to Hawai'i and the Pacific; disadvantaged eligibility; baccalaureate degree with a minimum GPA of 2.0; coursework in biology, chemistry, biochemistry, and physics; and MCAT with minimum of "5" in verbal reasoning; 2) Community Advisory Committee assists with screening applicants based on cognitive and non-cognitive factors and commitment to serve in areas of need. Committee submits list of candidates to medical school Admissions Committee. 3) Candidates interviewed by medical school Admissions Committee and recommendations submitted to Dean for final selection.	Selection and admission process occur in January through May. Applicants invited for interviews in April and May.	Evaluate students' performance through graduation and on possible factors related to success or failure related to graduation.
Phase I	Summer Orientation and Assessment: Administer assessments to obtain base-line data on students' knowledge in the sciences, reading, and learning skills. Curriculum includes instruction in learning skills (e.g., time management, exam preparation) with application to content-specific material; exercises to foster self-esteem and confidence as a learner; cultural impact on learning and problem-solving; introduction to PBL process; and use of campus resources.	6 weeks in summer, from July to August. Assessments administered include the Nelson-Denny Reading Test, Myers-Briggs Type Indicator (MBTI), Learning and Study Skills Inventory (LASSI), Survey of Reading and Study Efficiency (SR/SE), and Watson-Glaser Critical-Thinking Appraisal.	Based on the results of the assessments /pre-tests, an individualized education plan is developed by the faculty and shared with the student. Student feedback includes identification of learning styles, strengths, and areas of development. Students must attend all of the class sessions.
Phase II	Enrichment Curriculum: Integrated approach to learning is emphasized, whereby students learn to improve critical thinking skills in content areas. Curriculum includes biology, chemistry/biochemistry, scientific basis of medicine, speech and ethics in healthcare. Biology taught in a modified PBL format, and chemistry/biochemistry in lecture format. Gross Anatomy Lab and chemistry/biochemistry lab conducted. Cultural and health experiences are integrated within the context of the Scientific Basis of Medicine course and contributions from the Pacific are emphasized. Students enroll in speech and ethics in healthcare courses.	Fall and spring semesters of academic school year.	Students' progress monitored by faculty followed by systematic feedback to students at mid-semester and at the end-of-semester. Students must achieve 65% or higher in Academic Performance and satisfactory or better in Professional Standards and Ethical Behavior.
Phase III	Prematriculation: Bridging component designed to ease students' transition into medical school. Students taught the medical school's PBL format and evaluation. Students introduced to clinical skills with focus on doctor-patient relationship and cultural competency. Students participate in 2 week shadowing experience with a physician in a rural-setting.	6 weeks in the second summer, from May to July. Post-tests of assessments administered.	Students must achieve 65% or higher in their academic performance and satisfactory or better in Professional Standards and Ethical Behavior. Exit interviews provide students feedback on performance.
Post-Imi Ho'ola	Monitoring of students' progress in medical school through graduation.	Services include USMLE Exam preparation, advising and counseling, and basic science enrichment on an as needed basis.	Student enrichment/retention activities plan formulated in collaboration with JABSOM's academic and student services leadership.

In addition to provisional acceptance to JABSOM and financial support, the program incorporates components found in other post-baccalaureate programs for disadvantaged students into its educational model. They are as follows:

1. JABSOM's Commitment to the Program

JABSOM contributes to the Imi Ho'ola program in a multitude of ways. Most notably, faculty positions are designated to the program and funding for these positions is made available in the operating budget of the school. Instructional space specifically for Imi Ho'ola students is provided at JABSOM's medical education building. Office space is also provided for all faculty and support staff within close proximity to the Imi Ho'ola classroom. Imi Ho'ola students have access to common areas and resources used by medical students at JABSOM and therefore, interact on a daily basis with medical students and medical school faculty. These areas include the library, computer lab, and clinical skills resource room.

2. Curricula and Learning Process

The curricula spans over 12-months and is taught in three phases (see Table 2). Incorporated into the curricula are critical thinking, problem-solving, communication and time management skills. An integrated approach to learning is emphasized, engaging students in collaborative and cooperative learning. Students learn to function as a team and learning is active, hands-on, and self-directed.¹ The learning process takes into consideration the students' range of needs, interests, and learning styles. The psycho-social and cultural concepts that influence healthcare delivery to Hawaii's multicultural population and basic science concepts are introduced through a modified PBL methodology.

3. Faculty and Staff

Imi Ho'ola faculty members assume multiple roles in the program. They serve as advisors, mentors, and valuable resources through their retention and enrichment efforts of Imi Ho'ola alumni. All of the faculty and staff members are in full support of the educational model, and demonstrate their dedication by participating in all of the activities of the program, including service learning. A number of the faculty members are also Imi Ho'ola alumni, who impart a realistic view of the medical profession to students enrolled in the program.

4. Student Assessment and Evaluation

Imi Ho'ola provides students the opportunity to become

aware of their individual learning styles and academic strengths and weaknesses through assessment results, individualized education plans, and feedback from faculty. This is systematically done according to a specific timeline throughout Phases I, II, and III to monitor students' progress. This allows for early identification and intervention for any student that displays signs of poor academic performance.

5. Positive Learning Environment

Imi Ho'ola strives to provide a nurturing and safe environment through a support system comprised of faculty, staff and students themselves. The activities and the interpersonal relationships that are established assist students to increase their confidence as learners and individuals. The environment fosters a climate of personal concern for one another, provides access to resources, and creates an atmosphere of respect and confidentiality where students feel that their ideas and opinions are valued in bringing about positive change. Strong bonds are established, both socially and academically among students, faculty, and staff. Particular emphasis is placed on equal respect for the background and circumstances of all students.

Table 2 describes the program's major activities including the year-round curriculum and services for students.

In summary, the key factors in the program's success are the following: 1) the school's commitment and the institutionalization of the program; 2) emphasis placed on a comprehensive approach and the implementation of a curriculum and learning process that are aligned with the UH JABSOM curricula; 3) faculty and staff who support the instructional methodology and work as a team to address students' needs; 4) assessment of students and systematic feedback regarding individualized education plans and academic and non-academic progress; and 5) a positive learning environment for students.

Adaptation of the Model to Other Settings

Modifications would be necessary in adapting the Imi Ho'ola educational model to other populations and social-cultural environments. Factors to consider are:

- A leader or group of individuals who have the foresight, ability, and passion to develop the mission and vision of the program.
- Designated faculty and classroom space within the school.
- Faculty who support the philosophy and instructional

In addition to provisional acceptance to JABSOM and financial support, the program incorporates components found in other post-baccalaureate programs for disadvantaged students into its educational model

methodology of the program.

- Curriculum and instructional methodology reflective of the philosophy and goals of the program and the needs of the target population. The closer the methodology is aligned to the philosophy of the program, the smoother students' transition into their first-year in medical school.
- Curriculum that incorporates the varied learning styles of the students, emphasizing the application and integration of learning skills (e.g., communication, reading, problem-solving, and critical thinking skills) into content-specific areas so that students can become effective learners and to facilitate their academic success.
- Administration of assessments following admission to the program. Baseline data on students' knowledge in the sciences and skill levels will help to determine the individualized education plan for students.
- Systematic method to monitor students' academic performance and to develop a plan of enrichment as appropriate.
- A formalized method of providing feedback on students' academic performance and assessing the influence their home and social-cultural environment has on their learning needs.
- Social support to foster students' feelings of security and sense of belonging. The faculty and advisors can serve as mentors in the lives of students. Administrators, family, and other students are also critical elements of social support.
- Integration of retention efforts in medical school to make students' transition seamless and to monitor and support students' success through graduation. It is desirable to have faculty with dual teaching and counseling roles, in the program and in medical school.
- Partnerships among the federal and state governments, health profession schools, community groups and grass-root organizations in an effort to leverage resources (i.e., personnel, finances) and eventually, institutionalize the program.

Conclusion

The Imi Ho'ola Program plays an important role in ensuring diversity at the JABSOM and in the healthcare workforce in Hawai'i and the Pacific region. Imi Ho'ola is an educational model that embraces a comprehensive approach to preparing disadvantaged students to qualify and complete medical school. Academic enrichment together with attention to social

and cultural issues, successfully prepares the student to become a physician capable of helping individuals and families, and advocating for healthy communities. Partnerships among the federal and state governments, health profession schools, community groups, grass-root organizations, and program graduates will ensure continued success in training disadvantaged health professionals to meet the challenge of diversity in the healthcare workforce.

References

- a Cohen JJ. The consequences of premature abandonment of affirmative action in medical school admissions. *JAMA*. 2003; 289:1143-9.
- b Thomson WA, Denk JP. Promoting diversity in the medical school pipeline: A national overview. *Acad Med*. 1999; 74:312-4.
- c Post Baccalaureate Premedical Programs. <http://www.aamc.org/students/considering/postbac.htm>. Accessed 01/10/02. Association of American Medical Colleges, Washington, DC, 2002.
- d Blakely AW, Broussard LG. Blueprint for establishing an effective postbaccalaureate medical school pre-entry program for educationally disadvantaged students. *Acad Med*. 2003; 78:437-47.
- e Whitten CF. Postbaccalaureate program at Wayne State University School of Medicine: A 30-year report. *Acad Med*. 1999; 74:393-6.
- f Jackson EW, McGlenn S, Rainey M, Bardo HR. MEDPREP-30 years of making a difference. *Acad Med*. 2003; 78:448-53.
- g McGlenn S, Jackson EW, Bardo HR. Postbaccalaureate medical/dental education preparatory program (MEDPREP) at Southern Illinois University School of Medicine. *Acad Med*. 1999; 74:380-2.
- h Person, DA. Pacific island health care project: Early experiences with a web-based consultation and referral network. *Pacific Health Dialog*. 2000; Sept; 7(2):29-35.
- i Barrows HS. *How to Design a Problem-Based Curriculum for the Preclinical Years*. New York: Springer Publishing Company, 1985.

Academic enrichment together with attention to social and cultural issues, successfully prepares the student to become a physician capable of helping individuals and families, and advocating for healthy communities