

SPECIAL ARTICLE

A Student-Led Health Education Initiative Addressing Health Disparities in a Chinatown Community

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Together with community advocates, professional student organizations can help improve access to health care and sustain services to address the health disparities of a community in need. This paper examines the health concerns of an underserved Chinese community and introduces a student-led health education initiative that fosters service learning and student leadership. The initiative was recognized by the American Association of Colleges of Pharmacy (AACCP) and received the 2012-2013 Student Community Engaged Service Award.

Keywords: community health education, student-led, health disparities, Chinese Americans

INTRODUCTION

By 2060, the US Census Bureau anticipates more than half of the country's population will be comprised of minorities.¹ Influencing this impact are Asian Americans (as defined by the Census Bureau and the US Office of Management and Budget as "a person (living in the US) having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent."² Race data from the 2010 census showed the "Asian alone" group experienced the fastest growth in one decade—a 43% increase from 2000 to 2010.³ Today's Asian American population is projected to double by 2060.¹ Within this growing population are subgroups of Asians with varied educational backgrounds and socioeconomic status. However, existing data have been predominantly collected from population pools in large metropolitan cities, under-representing the true geographical distribution of Asian Americans across the nation. Lower socioeconomic communities that lack proper health care access and require more attention are overlooked. Nonetheless, Asian Americans continue to be stereotyped as the model minority, perceived to be superior in health and socioeconomic advantages compared to other minority groups. This perception poses challenges to recognizing existing health disparities among the growing population of Asians in the United States.

Health conditions known to disproportionately affect Asian Americans include cardiovascular disease, hepatitis B, psychological disorders, tuberculosis, and malignancies associated with liver, stomach, and colorectal cancer.^{4,5} Cardiovascular disease has been identified as a leading cause of death for Asian Americans in the United States, resulting from uncontrolled dyslipidemia, diabetes, and hypertension.⁶ Many of these diseases are preventable through early screening methods and education that stresses a healthier lifestyle. However, Asian Americans underutilize the health services offered in the United States as a result of cultural and socioeconomic barriers. Outreach to underserved minority groups such as Asian Americans requires the understanding of their common health disparities as well as an appreciation of known barriers such as acculturation, which can influence their access to care and perception of health.^{7,8}

Of the top 6 largest US Asian groups (Japanese, Korean, Asian Indian, Filipino, Vietnamese, and Chinese), Chinese Americans lead the US Asian population, representing just over 4 million people (23.2%).⁹ The Chinese also lead this group in rising poverty rates, reaching 15.2% in 2012.¹⁰ To our knowledge, this paper is the first to introduce a pharmacy student-led health education program, dedicated to improving the awareness of preventable disease states and addressing the health disparities of an underserved Chinese American community in Chicago, Illinois.

BACKGROUND OF THE ASIAN COMMUNITY HEALTH EDUCATION INITIATIVE

In October 2010, an interdisciplinary student organization known as the Asian Healthcare Association (AHA)

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was formed at Midwestern University (MWU). An overarching goal of this organization was to encourage health awareness of preventable disease states for local Asian American communities, while promoting opportunities for members to learn more about Asian health disparities. The association offered educational events on hypertension, diabetes, immunization and nonprescription drugs. Although AHA offers student membership to other health professions on campus, the majority of AHA members are Asian American pharmacy students.

The founding leaders of AHA took note of the diverse student body at MWU, encouraging membership regardless of racial background. To date, members have been predominately represented by Chinese, Korean, and Vietnamese students. Many are fluent in one of these languages with first-hand experience of the cultural behaviors, values, and expectations of associated customs. Baseline knowledge of preventable disease states, ability to communicate with patients in their native language, and an inherent understanding of the health beliefs and behaviors of Asians have been the foundation of success for AHA.

The efforts of AHA caught the interest of the executive director of the nonprofit community-based organization in the Chinatown District of Chicago known as the Midwest Asian Health Association (MAHA). The mission of MAHA is to reduce health disparities for the Asian American and Pacific Islanders in the Midwest through community health outreach programs, which include education, screening, immunization, and linkage to care. The group had provided periodic health services to the Chinese community for several years. However, with no licensed health care workers on staff, MAHA relied on volunteers to interpret laboratory results and educate patients accordingly. Maintaining consistent reliable health care volunteers to sustain the program was a challenge. Initial meetings between AHA and MAHA leaders revealed a mutual interest in providing a consistent, sustainable health awareness program, dedicated to educating the community about preventable disease states and reducing the health disparities most affecting this Asian group. As a result, the Asian Community Health Education Initiative (ACHEI) was established in April 2012.

The initiative is a unique collaboration between MAHA, which provides community access and insight about the Chinese American patient population, and the student volunteers of AHA, who use their clinical knowledge to educate and promote a healthier lifestyle for the underserved community. The student volunteers are the core of ACHEI. They sustain the initiative by soliciting and organizing volunteers monthly to provide consistent services.

Student volunteers apply their clinical knowledge and culturally appropriate behaviors and skills to optimize clinical outcomes, ensuring patients provide an accurate medical history, participate in preventative screenings, comply with scheduled immunizations, and are satisfied with their overall care. In return, students come to appreciate and reflect on their impact on addressing the health care needs of an underserved community. The initiative offers a unique extracurricular service learning experience that fosters peer-to-peer mentorship and leadership opportunities. The objectives of ACHEI are to: (1) identify the health disparities of an underserved Chinese American community; (2) apply clinical knowledge and culturally appropriate skills to educate patients on preventable disease states; (3) foster peer-to-peer mentorship, displaying accountability and leadership among student volunteers; (4) gain personal growth and satisfaction while addressing and reflecting on civic responsibilities; and (5) collect and disseminate information on identifiable health care gaps that need ongoing support and resources.

SERVICES PROVIDED BY ACHEI

Laboratory Consultation and Education (LCE)

Once a month, MAHA invites the Chinatown community to its blood-screening event. For a nominal fee, routine blood tests are offered to assess electrolytes, blood sugar, lipids and triglycerides, liver and kidney function, complete blood count with differential, and hepatitis B immunity status. The MAHA staff identifies and highlights abnormal laboratory values and mails results to their constituents.

Patients interested in reviewing their laboratory results with an LCE team may schedule a visit one Sunday a month from 8:00 am to 11:00 am in the MAHA facility, 2 weeks after the blood-screening event. During the 15-minute one-on-one visit, an LCE team reviews the laboratory results with educates the patient and in the patient's language (Mandarin or Cantonese). Through this encounter, patients gain a better understanding of their current health status and have the ability to ask questions through a student translator. Patients identified as high-risk based on laboratory findings are directed to local clinics for specialized medical care with a physician or the emergency department if immediate medical attention is necessary.

The LCE team consists of a licensed faculty pharmacist, a senior translator (service as a student volunteer has been consistent for one year or more) and an observing translator (service as a student volunteer has been less than one year). The senior translator relays laboratory information introduced by the faculty

pharmacist and educates patients in their native language, while the observing translator trains for future encounters and is mindful of the clinical and cultural nuances each patient can bring. Faculty pharmacists may or may not be fluent in the patient's native language. The director of MAHA is present during the monthly LCE visits and oversees the translated education provided by our students while assessing overall patient satisfaction.

Generally, 2 LCE teams are assigned each month to accommodate the number of patients appointed to each visit. An early observation noted by the student leaders of ACHEI was the inconsistencies in patient assessment questions between the LCE teams. To improve consistency, student leaders developed a consultation flow sheet (Appendix A). The flow sheet includes a set of standardized preliminary questions the senior student translator should ask every patient at the start of the LCE visit. Asians, in general, have been characterized as high-context communicators,¹¹ meaning they can be ambiguous and indirect with their communication; that is, smiles and nods of agreement may not indicate they understand. This can lead to differences in the interpretation of their true feelings or concerns.

We have found this characteristic evident as many of our Chinese patients are not direct and open with their history, such as alerting us of their previous visit(s) with ACHEI, their past medical history, and their medication use, even with a translator present. The standardized preliminary questions allow consistent patient assessment and streamlines the brief consultation period to address the patient's most concerning health issues and questions. Closing questions on the flow sheet remind the team to determine if follow-up laboratory tests, immunizations, or medical interventions are needed.

Most patients have assiduous work schedules, laboring long hours as cooks or waiters at local Chinese restaurants. As a result, many lack the time and energy to seek appropriate health care, even if appropriate and accessible care exists. Although medication therapy may be indicated for some patients based on current guidelines, many are not eligible for insurance coverage or are burdened by barriers to access proper health care. Therefore, ACHEI takes an immediate point-of-care approach during the LCE visit to educate and promote lifestyle modifications and healthy behaviors that can prevent disease and halt disease progression. Patients requiring the need for prescription medication or specialized medical care with a physician are referred to and managed by the MAHA director. Topics of health education targeted for our patient population have been largely determined by collected health data disseminated through annual student

research projects.¹²⁻¹⁴ Through these projects, we have found, for example, that hypertension impacts more than 60% of patients.^{13,14}

Interestingly, using updated cholesterol guidelines, we identified a 52% increase in the number of patients who would benefit from cholesterol medication compared with assessments based on former cholesterol guidelines.¹⁴⁻¹⁶ Up to 30% of patients screened were candidates for the hepatitis B vaccine.¹³ Another study assessed the utility of a point-of-care A1c device to identify the diabetes status of our ACHEI patients and found 67% and 14% had unknown prediabetes and diabetes, respectively.¹⁷

Results such as these have directed us to target our health education topics around cardiovascular disease including hypertension, diabetes, and dyslipidemia, in addition to hepatitis B and the health benefits of improving nutrition and exercising. We plan to use much of the same data to further understand the health disparities most affecting this patient population and to justify support for improving our services. Collection of patient-related data for the aforementioned studies was given exempt or expedited approval by the MWU Institutional Review Board.

While health education topics were targeted, we observed over time the delivery of education was not consistent. Depending on the availability of faculty and student volunteers, LCE teams varied visit to visit. Therefore, we implemented learning tools for volunteers to maintain consistency when introducing health education topics to patients. Student leaders of ACHEI developed 15-minute PowerPoint presentations on diabetes, hypertension, dyslipidemia, hepatitis B, nutrition and exercise, Chinese medical terminology, and interpreting laboratory values.

The objective of these presentations were to focus on disease prevention, listing risk factors of disease states, identifying laboratory values to help recognize and assess disease progression, and promoting strategies for a healthier lifestyle. All student presentations were reviewed and approved by clinical faculty members at MWU. These presentations serve as a resource for all ACHEI volunteers. They are presented during an orientation session at the start of the school year and are distributed via e-mail to volunteers prior to their assigned LCE visit. Reinforcing the baseline clinical knowledge of common disease states enhances students' confidence and also influences patients' perception of students as reliable resources.

A considerable amount of time during the LCE visit is dedicated to educating patients on improving their nutrition and exercise. The Chinese version of the US Department of Agriculture's MyPlate image¹⁸ is used as a visual tool during each LCE visit to emphasize the 5 essential food groups and assist patients in developing

a healthier diet (Appendix B). In addition to the MyPlate image, we use pictures and videos to describe parts of the human anatomy or show healthy food items. Incorporating visual tools while educating in the patient's native language are helpful methods to underscore take-home points during each LCE visit.

Immunizations

Many of the student volunteers are certified to administer immunizations, so the director of MAHA inquired about organizing an immunization station during the LCE visits to give the seasonal influenza and hepatitis B vaccines. Serious health outcomes such as hospitalization and death have resulted from the influenza virus, and this risk increases for those over the age of 65.¹⁹ Conveying this message to the patient receiving the vaccine through a student translator establishes a mode of communication that may spread the importance of vaccinations to others in the community.

Morbidity and mortality associated with chronic hepatitis B is highest among Asian Americans.²⁰ The hepatitis B vaccine includes a 3-dose series of injections at 0, 1, and 6 months. However, only 51% of high-risk adults between the ages of 18 and 49 receive more than one dose of the vaccine.²¹ This is a major concern as hepatitis B is transmitted through bodily fluids, and complications of untreated hepatitis B can progress to cirrhosis and hepatocellular carcinoma. Therefore, compliance in receiving all 3 doses of the hepatitis B vaccine is critical for optimizing its protective effects.

Student coordinators in ACHEI work with student coordinators from the American Pharmacist Association-Academy of Student Pharmacists Operation Immunization to solicit 2-3 certified student immunizers and a faculty supervisor each month. Most student volunteers are not certified to be immunizers until their third professional year of pharmacy school. As a result, scheduling enough immunizers, especially during the busy flu season, is a challenge. Reaching out to student organizations outside of MWU has remedied this, as ACHEI now alternates monthly immunizations with certified student immunizers from a local medical school. Members of MAHA supply the vaccines and AHA funds the immunization supplies. Offering immunizations during the monthly ACHEI visits allows more people to be immunized, potentially reducing transmission and resulting complications of vaccine-preventable illnesses.

Manual Blood Pressure Monitoring

We found using automated at-home blood pressure (BP) devices were inconsistent or defective. Moreover, many students were not comfortable assessing blood pressure manually. As an essential skill used by many health

care professionals, we incorporated manual BP monitoring into our program. All automated BP machines were replaced with BP cuffs and stethoscopes. Many patients come to the LCE visits just to have their BP checked. A small station is positioned outside the LCE area for students to monitor BP manually for interested patients. Students training to provide manual BP may practice their technique on a patient while being overseen and mentored by a trained senior student volunteer. They use this opportunity to educate patients in their native language and offer BP goals and tips to modify their lifestyle and improve their overall cardiovascular health.

STUDENT INVOLVEMENT AND LEADERSHIP OPPORTUNITIES

Opportunities to volunteer for ACHEI are offered to all student members of AHA and the initial pool of students usually consists of 10-12 students. Incorporation of services such as immunization and BP monitoring allows more nonChinese speaking students to volunteer for ACHEI, increasing interest and growth. Given that participation is voluntary, we have not established metrics to formally assess the success of our students' ability to achieve ACHEI objectives. However, the initiative is sustaining and improving services with ongoing support and acknowledgement from the community.

A less formalized mode of assessment is performed on a peer-to-peer level. Students judge the performance of their peers by holding each other accountable for their responsibilities and duties. All of the services typically pair a senior (experienced) volunteer, who mentors and trains the new (observing) volunteer. Students in training receive formative feedback from their senior mentor throughout the experiences. Therefore, the term "student-led" involves a broader responsibility. Students not only ensure ACHEI operations are organized and functional month to month, but they also hold each other accountable for securing the stability of the program. In general, student volunteers learn to work as a team and are less likely to disappoint each other. A tiered peer-to-peer mentoring pyramid best explains the impact of peer mentoring over the course of several years (Figure 2).²²

A peer-to-peer mentoring arrangement relies on the senior volunteer to model his or her experiences and achievements, while overseeing the performance of the training volunteer, who is striving to gain the senior volunteer status. This arrangement is applied at every level (first through fourth professional year) of the tiered peer-to-peer mentoring structure. As students progress through professional programs, their interests and availability to volunteer for ACHEI can wane over time. Therefore, the

large base of interested student volunteers eventually narrows over the years, resulting in a remainder of 3-5 of the most dedicated students. To acknowledge those who reach the top, students who consistently volunteer and show a genuine commitment to sustain the services of ACHEI and influence its growth are promoted to senior volunteer status. These senior volunteers are given the opportunity to conduct research and co-author poster presentations and manuscripts, showcasing their efforts and achievements.

Establishing these incentives for the students gives them a more tangible goal to strive for while remaining committed to ACHEI. Presenting, publishing, and being recognized locally and nationally for community service are valuable to students as jobs and postgraduate training opportunities become more competitive. We hope these incentives will further expand recruitment of dependable and reliable student volunteers moving forward.

ACHEI student leaders include 2 site coordinators and 2 research data collectors. The peer-to-peer mentoring pyramid is applied here as well, where selected incoming student leaders (first or second professional year) are mentored and trained by experienced senior student leaders (third and fourth professional year). Typically, the overlap of roles and responsibilities between senior and incoming leaders occurs over a year (second professional year), allowing for a smooth transition.

Responsibilities of site coordinators include communicating with the MAHA director, organizing monthly sessions and handling all related ACHEI issues, soliciting and scheduling volunteer pharmacists, student translators, and certified student immunizers, distributing LCE educational material to participants prior to each assigned visit, assessing and maintaining immunization supplies,

and supervising and mentoring incoming ACHEI coordinators and other new student volunteers.

Understanding a patient population is key to acknowledging and addressing its health disparities. The research data collectors collate retrospective patient data each month during the LCE visits. As they have a first-hand look at the health of the patient population, data collectors are sometimes lead authors on publications. Obtaining and aggregating health data can be a unique component of service learning, allowing students to recognize the health care gaps and observe the impact of service interventions. Significant findings can be disseminated to help sustain and expand community services.

Over the years, patients, community advocates, and student volunteers have sustained a genuine interest in the program. From April 2012 to August 2014, a total of 1699 patients were screened at MAHA, and 443 patients participated in the LCE visits.¹⁴ The average age of these patients was 50 years, with females accounting for 60.5% of the total population. Early fluctuations and disparities in the number of patients screened and consulted each month evened out during the third year of the program, and after averaged approximately 60 patients and 20 patients during the screening and consultation visits, respectively (Figure 1). We speculate the tapering over the years is influenced by the awareness of the regularly scheduled visits, offering the public security that opportunities to attend a LCE session are available monthly.

A higher number of screeners over the years correlates to the presence of a hepatologist during the LCE visits, requiring more patients to obtain laboratory draws for liver function tests prior to hepatitis consultation. The immunization services have grown since we began. We now average 10-12 immunizations monthly for hepatitis B,

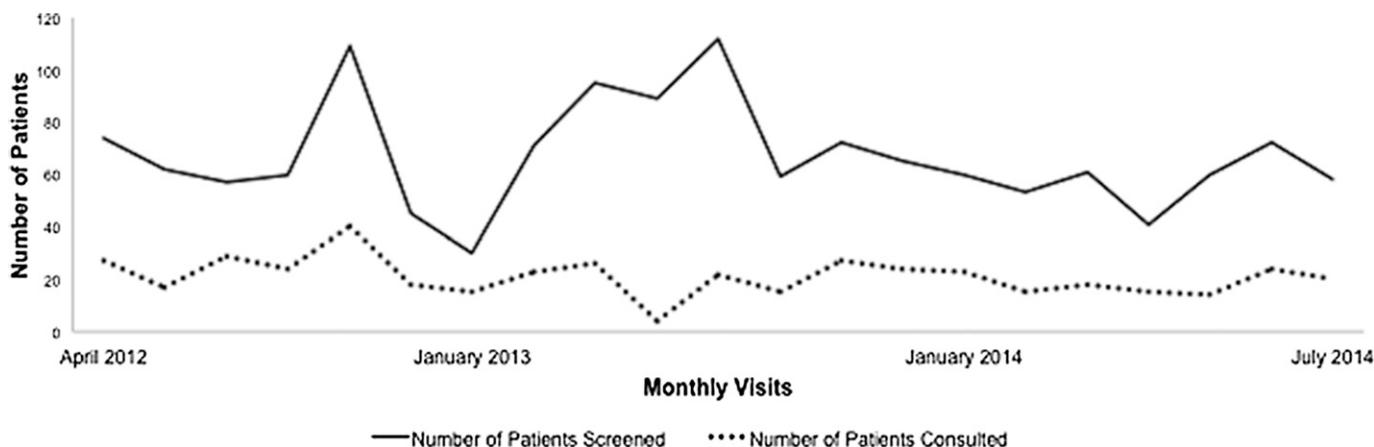


Figure 1. Monthly Attendance for the Midwest Asian Health Association Blood-screening and Asian Community Health Education Initiative Laboratory Consultation and Education Visits from April 2012 to July 2014.

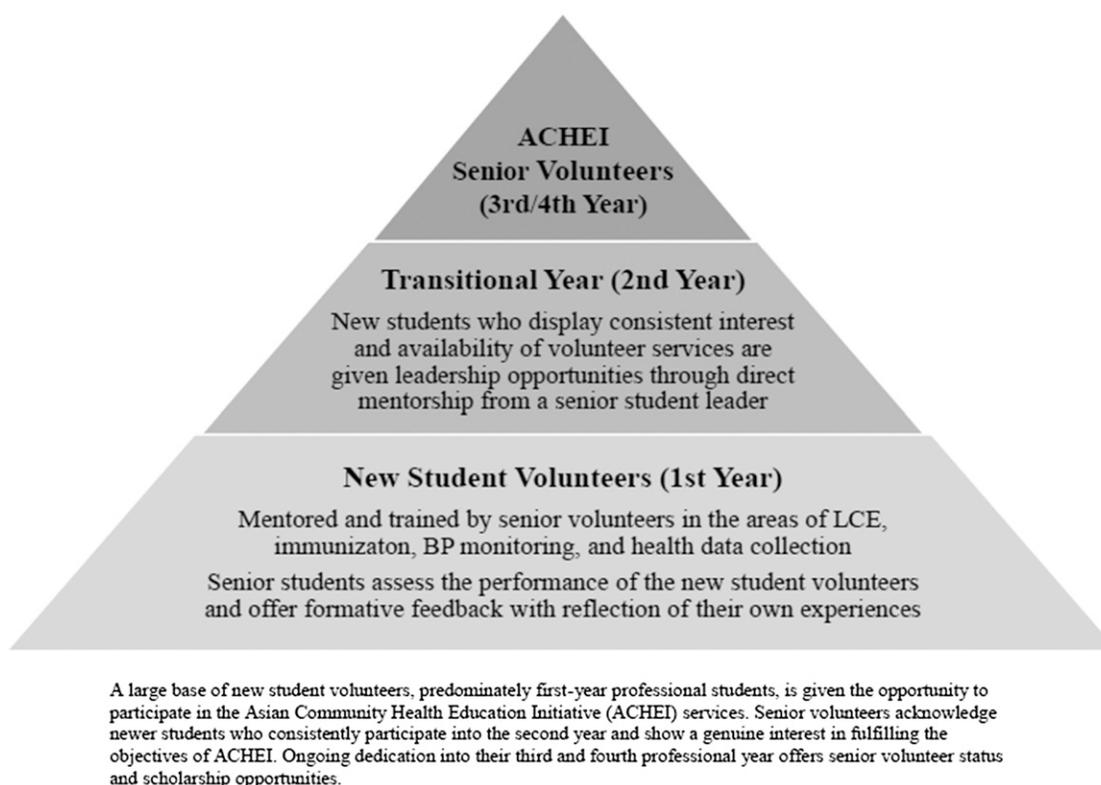


Figure 2. Peer-to-peer Mentoring Pyramid in the Asian Community Health Education Initiative.

and we immunize up to 82 people from the community during a busy flu season.

The support and enthusiasm of the Chinese American community and the director of MAHA is a reflection of ACHEI's success, and MAHA recognized ACHEI during their annual benefit reception 2 years in a row. The mayor of Chicago and various congressional leaders also acknowledged the services of ACHEI through letters of support. The initiative was fortunate to receive the 2012-2013 Student Community Engaged Service Award from AACP and TEVA Pharmaceuticals. Receiving this award has been paramount in stimulating the growth of the program over the past few years.

FUTURE DIRECTION OF THE INITIATIVE

As with any service learning opportunity, there is room for improvement. Future goals for ACHEI include: generating ideas to maintain volunteer interest and sustain services; developing and introducing formalized metrics to measure the program's success; surveying patients and student volunteers to assess the overall quality of services; incorporating an interdisciplinary model for comprehensive care; offering similar service learning opportunities to other underserved Asian communities in the Chicago area (Korean, Vietnamese, Indian); applying technology to improve health education; gaining financial support

through aggregated health data; and sharing experiences and tools for others to build their own student-led health education program.

Because ACHEI is an extracurricular service learning experience supported by volunteers, there are challenges to reaching these goals with the quality and accountability desired. Services such as those offered through ACHEI should be experienced and reflected on by every health care professional in training. The 2016 Accreditation Council for Pharmacy Education's (ACPE) Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree was recently revised to ensure students are "practice-ready" and "team-ready" upon graduation.²³

The council encourages innovative approaches to achieving compliance with the standards. One approach would be to transform ACHEI from an extracurricular opportunity to a co-curricular experience. Such experiences are described by ACPE as those "that advance the development of professional attitudes and behaviors in all students. Co-curricular experiences are external to classroom, laboratory and practice site experiences, but complement and advance the learning that occurs within the formal curriculum, particularly learning related to Standards 3

(Approach to Practice and Care) and 4 (Personal and Professional Development).”²⁴

The planning and implementation of such an idea would require dedication from faculty members and collaboration with community organizations. Many unique relationships and collaboration with surrounding community centers already may be established through professional student organizations. Incorporating the ideas and practices of AHCEI into the curriculum would offer this service learning experience to all students, not just to those who volunteer.

CONCLUSION

Identifying and understanding the causes of health disparities among Asian Americans can be difficult because they are a rapidly growing minority group with numerous and complex members. The Asian Community Health Education Initiative works to understand this vulnerable population through the passion and commitment of student and community volunteers. The student-led health education initiative provides a niche practice, offering free, culturally appropriate, medical assessments while educating patients in their native language. In return, student volunteers come to appreciate service learning—even sometimes realizing that the services they offer are not enough. Experiencing this has greatly influenced many students and has helped mold and motivate them to be accountable service leaders who work to decrease health disparities of the Chinese American community.

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Appendix A. Asian Community Health Education Initiative Consultation Flow Sheet

Preliminary Questions

As the pharmacist assesses the patient lab values, the pharmacy student should ask the following questions:

1. Is this your first time visiting ACHEI?
2. What is(are) your current health condition(s)?
3. What is(are) your family history of disease? (Include parents, siblings, as well as any immediate family members).
4. How much and how often do you drink alcohol?
5. How much and how often do you smoke?
6. What medication are you taking?
7. What nonprescription products or supplements are you taking? herbal products?
8. When was the last time you saw your doctor or had a physical examination?

Follow-up Questions

Ensure to address the following concerns before the patient leaves:

1. Follow-up: Does the patient require follow-up labs? Will the patient require follow-up consultation to re-assess disease state management? (Inform the patient of future blood draw date/follow-up consultation dates.)
2. Immunization: Has the patient received all 3 hepatitis B shots? Has the patient received the flu shot? (If not, arrange for the patient to receive the vaccine(s) prior to leaving and/or schedule all follow-up appointments to complete the hepatitis B series.)
3. Medical Care: Does the patient need to see a physician or receive emergency care? (If yes, refer the patient to the list of local clinics and emergency departments.)

Appendix B. A Visual Handout Utilizing the Chinese-language Version of MyPlate



The addition of exercise 4-5 times per week for 30-60 minutes at a time and quitting smoking assists with lowering cholesterol and blood sugar levels as well as increasing cardiovascular health. 增加運動, 每週 4-5 次, 每次 30-60 分鐘的時間. 同時戒菸有助於降低膽固醇和血糖水平, 增加心血管健康.

Nutrition and Exercise Education. The Chinese-language version of MyPlate, introduced during the Laboratory Consultation and Education LCE visits to help educate patients on nutrition and exercise and assist them in building a healthier diet. The MyPlate image emphasizes the 5 essential food groups: (clock-wise from the top left corner) fruits, grains, dairy, protein, and vegetables.