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## Development of an English as a Second Language Curriculum for Hepatitis B Virus Testing in Chinese Americans

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### Abstract

Chinese Americans are at disproportionately high risk of liver cancer. A major risk factor for liver cancer in Asia is infection with hepatitis B virus (HBV): Approximately 80% of liver cancers are linked to HBV, and chronic carriers of HBV are > 100 times more likely to develop liver cancer compared with noncarriers. However, many adults, particularly those who have immigrated to the U.S., remain untested and therefore unvaccinated or unmonitored for the disease. Chinese Americans are mostly foreign born, and more recent arrivals face multiple social and health challenges. Many require special attention from public health professionals because of low levels of acculturation and difficulties learning English. It has long been established that an English as a Second Language (ESL) curriculum can teach immigrant adults and their family's important life skills, such as job training and citizenship. The authors report on their plans to develop and pilot test a culturally appropriate curriculum that will motivate Chinese ESL students to obtain a blood test for the detection of the HBV.

### Keywords

Asian American Network for Cancer Awareness, Research, and Training; cancer; Asian; hepatitis B virus; English as a second language

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Liver cancer is one of the fastest growing cancers in the U.S. and a major cause of cancer deaths worldwide.<sup>1</sup> Chinese Americans are at disproportionately high risk for liver cancer; Surveillance, Epidemiology, and End Results data indicate that liver cancer incidence among Chinese males exceeds 20 per 100,000, compared with 3.7 among non-Latino white males. A similar disparity exists for Chinese females, whose reported incidence is 5.3 per 100,000, compared with 1.5 for non-Latina white females.<sup>2</sup> A major risk factor for liver cancer in Asia is infection with hepatitis B virus (HBV); approximately 80% of liver cancers are linked to HBV, and chronic carriers of HBV are > 100 times more likely to develop liver cancer compared with noncarriers.<sup>3,4</sup> HBV can be transmitted from one individual to another vertically at birth or horizontally, through sexual intercourse or close household contact with family members. However, many adults, particularly those who have immigrated to the U.S., remain untested and, thus, unvaccinated or unmonitored for the disease.

Census Bureau information shows that there were 2,400,000 ethnic Chinese living in the U.S. in 2000, and Chinese were the largest Asian-American subgroup.<sup>5</sup> Over the last 4 decades,

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Chinese immigration to North America has increased dramatically.<sup>6,7</sup> Chinese Americans mostly are foreign born,<sup>7</sup> and more recent arrivals face multiple social and health challenges. Many require special attention from public health professionals because of low levels of acculturation and difficulties learning English.<sup>8</sup>

It has long been established that an English as a Second Language (ESL) curriculum can teach immigrant adults and their families important life skills, such as job training and citizenship. ESL classes provide ready access to populations with limited English language proficiency (who often are not reached by English-language health education materials or media-based health education campaigns).<sup>9,10</sup> More recently, ESL curricula have been designed to deliver health messages about breast and cervical cancer screening.<sup>11</sup>

The objective of this pilot study was to develop and pilot-test a culturally appropriate HBV ESL curriculum at a community agency that serves low-income, limited English-speaking Chinese immigrants. The pilot study will examine the feasibility and acceptability of such a curriculum as a component of ESL education. Pilot data will contribute to a future proposal to examine the effectiveness of an ESL curriculum to increase HBV testing, so that susceptible adults can be vaccinated against infection, and carriers can be monitored appropriately.

## Setting

The study will be conducted at a community organization in Seattle that has served low-income, limited English-speaking Chinese Immigrants for over 30 years. The organization offers cultural orientation, job training, and English instruction among other services and serves over 4000 individuals annually.

## Conceptual Model

The Health Behavior Framework (HBF), which was developed by Bastani et al., represents a synthesis of the major theoretical formulations in the areas of preventive health compliance and will serve as the conceptual framework for this study.<sup>12,13</sup> The framework has been used successfully to develop survey instruments and intervention programs for diverse target populations (e.g., patients, physicians, and community members), racial/ethnic groups (including Asian Americans), and screening behaviors (e.g., breast, colorectal, and prostate cancer screening). Unlike many frameworks, the HBF recognizes that factors affecting behavior may vary between population subgroups and can be determined culturally.

## The Curriculum

The HBF and findings from an ongoing hepatitis B qualitative study, as well as focus groups of ESL teachers and students, will be used to develop the hepatitis B curriculum.<sup>13–16</sup> Examples of specific items are provided in Table 1. Standard ESL teaching methods for upper beginner/lower intermediate-level classes will be incorporated into the hepatitis B ESL curriculum. For example, the session may start with the teacher presenting an illustration of a Chinese man getting vaccinated for hepatitis B and asking the students to contribute to a story. The teacher may ask open questions to prompt a response, such as “What do you think is happening?” When the story is completed, the teacher may read it back to the students. The session may continue with a “warm-up” period during which the students may be asked whether they have heard of hepatitis B and, if so, what they know about it. In addition, pictorial displays may be used to teach students about routes of hepatitis B transmission (e.g., pictures of a toothbrush and razor). Teachers may ask the students to form small groups and tell them about a hypothetical case in which one of their family members is infected with HBV. The teacher would then provide discussion questions, such as: Do you think other members of your family should be tested? What can the infected individual do to prevent passing the virus onto the

children in the family? Students may answer a short series of written “true or false” questions about what to do if they or their family member becomes infected during a “see if you remember what you have learned” section. A group discussion of the answers may ensue. Finally, “fill-in-the-blank” exercises may be given to students to reinforce key vocabulary words related to hepatitis B (e.g., vaccination and hepatitis). The ESL hepatitis B curriculum will be designed for incorporation into standard ESL courses. ESL courses generally are taught in English; thus, the curriculum will be developed in English. However, relevant vocabulary will be provided in both English and Chinese.

## Study Design

Figure 1 provides an outline of the study activities. An ESL curriculum will be developed to overcome barriers and enhance facilitators to hepatitis B testing. We will conduct four focus groups among current ESL students: two to explore preferences for educational methods (e.g., pictorial displays, stories, and role-playing; one in Cantonese and one in Mandarin) and two to obtain feedback on the curriculum and ensure the cultural relevancy of the content and images (one in Cantonese and one in Mandarin). We also will conduct two focus groups among ESL instructors. These focus groups will identify strategies for incorporating the curriculum into standard material and obtain input on the curriculum. Focus group participants will be both men and women ages 18–64 years. Participants will be recruited by the ESL program coordinator at the collaborating organization. Student focus group facilitators are project staff members who are immigrants to the U.S. of Chinese descent, who speak Cantonese or Mandarin, who are trained in focus group facilitation, and who are familiar with cultural issues regarding deference. The ESL program coordinator will not attend the student focus groups to avoid withholding of information among students or bias because of deference to authority. The instructor focus group facilitator is the Principal Investigator.

When disagreement arises in student and instructor input, a discussion will take place between the Principal Investigator and the faculty consultant, who has much previous experience in the development of ESL curricula. Together, they will develop a consensus on what to include in the curriculum.

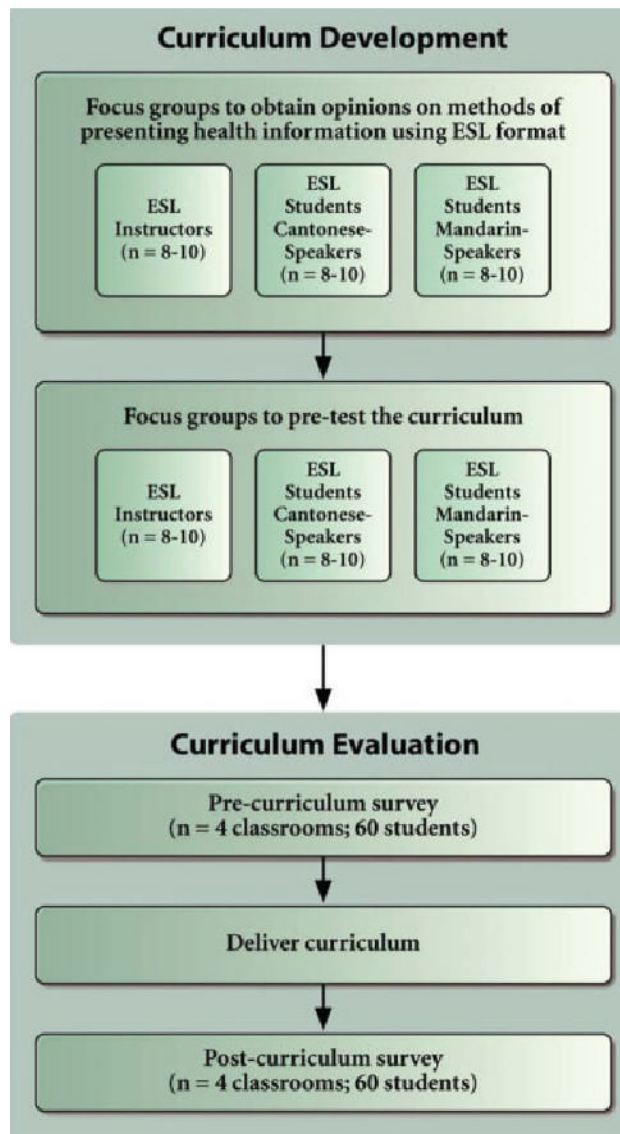
Once the curriculum has been developed, it will be delivered in four upper beginner/lower intermediate-level ESL classrooms of the collaborating organization. Upper beginner/lower intermediate-level classes were chosen based on recommendations by the ESL program coordinator and the observation that these students have sufficient English-language proficiency to comprehend an English curriculum on hepatitis B. Current students in upper beginner/lower intermediate-level ESL classes will be recruited (by the ESL program coordinator) to participate in a single, 90-minute ESL session, during which the newly developed curriculum will be delivered. Students in the classes will be asked to complete a precurriculum and postcurriculum, self-administered survey (in Chinese) to determine baseline knowledge of hepatitis B and testing practices and to conduct a process evaluation of the curriculum. The precurriculum survey will ask respondents whether they have been tested for HBV. Other questions will focus on relevant HBF variables. Examples of questions include the following: Do you think hepatitis B can be spread from person to person during sexual intercourse? Do you think hepatitis B can be spread from person to person by sharing a toothbrush? If someone looks and feels healthy, do you think that person can spread hepatitis B (knowledge)? Are any of your family members chronically infected with hepatitis B (perceived susceptibility)? Do you think people with hepatitis B can be infected for life? Do you think hepatitis B can cause liver cancer (perceived severity)? Have any of your friends ever suggested that you get tested for hepatitis B (social support)? Has a physician ever recommended that you get tested for hepatitis B (communication with provider)? The postcurriculum survey, which will be self-administered immediately after the curriculum

delivery, will include knowledge items from the precurriculum survey as well as additional items for process evaluation of the ESL curriculum. These items will address the attraction (e.g., what did you like most about the hepatitis B curriculum?), comprehension (did you understand the section about hepatitis B testing?), acceptability (were you embarrassed talking about sexual transmission of hepatitis B?), and persuasion (did information presented in the class make it easier for you to get a hepatitis B test?) of our educational program. The study protocol and data collection instruments have been reviewed and approved by the Institutional Review Board at the Fred Hutchinson Cancer Research Center.

In conclusion, for this study, we will collect qualitative and quantitative information to develop and pilot test a culturally appropriate curriculum that will motivate Chinese ESL students to obtain a blood test for the detection of HBV. The results of this study will inform the development of an ESL-based intervention to improve participation in HBV testing for this high-risk population.

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**FIGURE 1.** This schematic illustrates the study design. ESL: English as a Second Language curriculum.

**TABLE. 1**  
Hepatitis B Testing Examples for Health Behavior Framework

<b>HBF factors</b>	<b>HBV testing examples</b>
Knowledge	Knowing HBV can be spread during childbirth, by sexual intercourse, by close household contact, and by someone that looks and feels healthy
Communication and rapport with provider	Having received a physician recommendation for HBV testing; feeling comfortable asking physician(s) for tests
Perceived susceptibility	Thinking Chinese are at high risk of HBV infection; having family members who are HBV chronic carriers
Perceived severity	Believing HBV can cause liver cancer and can be fatal
Perceived outcome efficacy	Believing HBV disease can be treated better if it is detected early
Social support	Having received a recommendation for HBV testing from family members and/or friends
Social norms	Having family members and/or friends who have been tested for HBV

HBF: Health Behavior Framework; HBV: hepatitis B virus.