Published in final edited form as:

J Cancer Educ. 2016 June ; 31(2): 292–300. doi:10.1007/s13187-015-0836-x.

The Asian Grocery Store-Based Cancer Education Program: Creating New Education Modules

Linh Truong¹, John Tat^{2,3,6}, Molly Booy⁴, Annie Le^{5,6}, Jeanne Marie Marasigan^{6,7}, Christine Yuan⁶, Athena Zeng⁶, Anand Panchal⁶, and Georgia Robins Sadler^{1,6,8}

¹University of California, San Diego, School of Medicine, 9500 Gilman Dr, La Jolla, CA 92093 USA

²Department of Cell and Molecular Biology, The Scripps Research Institute, 10550 North Torrey Pines Rd, MB-07, La Jolla, CA 92037-1000 USA

³Kellogg School of Science and Technology, The Scripps Research Institute, 10550 North Torrey Pines Rd, MB-07, La Jolla, CA 92037-1000 USA

⁴Northeast Ohio Medical University, 4209 Ohio 44, Rootstown, OH 44272 USA

⁵University of California, Los Angeles, Fielding School of Public Health, 640 Charles E. Young Dr. S, Los Angeles, CA 90024 USA

⁶University of California, San Diego Moores Cancer Center, 3855 Health Sciences Drive MC 0850, La Jolla, CA 92093-0850 USA

⁷San Diego Mesa College, 7250 Mesa College Drive, San Diego, CA 92111 USA

⁸Department of Surgery, University of California, San Diego, School of Medicine, 9500 Gilman Dr., La Jolla CA 92093-0850 USA

Abstract

Purpose—Operating since 1994, the UCSD Moores Cancer Center’s *Asian Grocery Store-Based Cancer Education Program* (the Program) is a proven and sustainable strategy for disseminating cancer and poison control information to Asian and Pacific Islander (API) communities. This paper describes the process taken to identify health topics that can be readily addressed within the Program’s infrastructure, and reports results of the pilot testing of the educational module that was developed by following that process.

Methods—The development of each new module is guided by the Health Belief Model and the Tipping Point Model. The process starts with the selection of a health topic demonstrating pressing need and treatment options in the API community. Then, using the Pareto Principle, reasonably modifiable risk factors are chosen to be addressed in the module. “Sticky messaging” for the modifiable risk factors is developed to package the health information as memorable and

Corresponding author: Georgia Robins Sadler, BSN, MBA, PhD, Clinical Professor of Surgery, Associate Director for Community Outreach, UCSD Moores Cancer Center, 3855 Health Sciences Drive MC 0850, La Jolla CA, 92093-0850 USA, Phone: (858) 822-7611, gsadler@ucsd.edu.

CONFLICTS OF INTEREST

The authors declare no competing interests.

transmissible calls-to-action. Finally, grocery store outreaches were used to pilot test the new module to assess its effectiveness at facilitating health care information to API community members.

Results—By adhering to the steps described in this paper, the authors were able to: (1) select liver cancer as a pressing API health issue that could be positively impacted by the Program; (2) identify reasonably modifiable risk factors for the chosen health issue; (3) generate compelling call-to-action messages to decrease risk of exposure; and (4) demonstrate the cultural and linguistic alignment of the liver cancer control module.

Conclusion—The development and testing of new health education modules follow a methodical process guided by scientific principles. Understanding and employing the elements of an existing evidence-based and sustainable health education program can increase the likelihood of success in addressing the health needs of the API community.

INTRODUCTION

Health disparities among different racial and ethnic groups are a pervasive and persistent problem in the United States (U.S.) [1]. There is abundant evidence that African Americans, Asian Americans, Hispanic Americans, and Native Americans, as well as Asians and Pacific Islanders, experience excess morbidity and mortality spanning a broad range of disease categories compared to non-Hispanic Whites [2–4]. Various agencies have documented that such excess is partly due to the disproportionate barriers to health care access and quality experienced by minority populations [5]. Thus, not all groups have benefited equally from advances in medical care and technology.

One strategy for closing the nation’s health gaps is creating tailored community outreach programs [1, 6]. Community-based health promotion has proven to be effective at disseminating accurate information on modifiable risk factors, screening guidelines, and treatment options to minority populations [7–11]. Increasing individuals’ knowledge can increase their care-seeking motivation and skills, enhance their informed decision-making, and promote their adherence to clinical recommendations [2]. While structural influences on health disparities demand further attention [2, 12], expanding communities’ access to health information and clinical services can reduce barriers to health equity.

It is often the case that new education programs are created each time an intervention is required [13]. This redundancy is costly and, therefore, difficult to sustain. The limited funds available to support health promotion programs need to be used more efficiently to achieve greater public benefit, such as by replicating evidence-based programs or expanding the scope of existing programs to address other health concerns [13, 14]. To this end, many public health educators have recognized the value of identifying evidence-based programs that are worthy of replication [13, 15, 16]. Online databases, such as Cancer Control P.L.A.N.E.T. and the Community Guide, detail successful elements of existing health education programs that can be used exactly as they were scientifically tested, or that can be modified for a wider range of health and welfare topics relevant to a focus population [15, 16].

In San Diego County, the UCSD Moores Cancer Center's *Asian Grocery Store-Based Cancer Education Program* (the Program), is focused on increasing the Asian and Pacific Islander (API) community's awareness of how to reduce cancer morbidity and mortality rates. Continuously operating since 1994, the Program was shown to be effective at raising the API community's knowledge about breast cancer and promoting API women's adherence to breast cancer screening guidelines [17–20].

The breast cancer education module was subsequently adapted to test whether the Program could serve equally well as a delivery strategy for information about lung and other tobacco-related cancers, and to promote the use of the *California Smokers' Helpline* [21]. Recently, the *California Poison Control System* asked that a module be developed to test whether the Program's infrastructure could accommodate their agenda: to have members of the local API community store the *California Poison Control System's* toll-free phone number in their cell phones and address books. The poison control module also served to test whether the Program's infrastructure could facilitate information dissemination on health topics other than cancer prevention and screening. The results of that study will be reported elsewhere.

The success and cultural acceptability of the various educational outreach modules demonstrated the Program's versatility, as it successfully delivered a variety of health-related information to the API community. The key elements of the Program's infrastructure can be leveraged to address other health concerns that disproportionately affect the API community.

In this manuscript, the authors describe the steps that are taken in identifying a significant health topic that could be addressed within the Program's infrastructure and creating a new educational module to address that topic. The development and pilot testing of a new module about liver cancer are explained to demonstrate the process for creating and implementing each new Program module.

METHOD USED TO DEVELOP NEW MODULES FOR THE EVIDENCE-BASED PROGRAM

Theoretical Models

The Health Belief Model (HBM) guided the development of the Program's outreach modules. The HBM is the most commonly-used model to explain and predict health-related behaviors based on individuals' perceptions of: (1) the severity of the disease; (2) susceptibility to the disease; (3) benefits of taking action against the disease; (4) barriers to taking action; and (5) repeated cues to action in their environment [22]. Malcolm Gladwell's Tipping Point Model delineated additional elements that can help trigger widespread social change: (1) using a message that will stick in people's minds; (2) having the right people disseminating the sticky message; and (3) building upon changes in the environment that facilitate taking action on the message [23]. Finally, the Pareto Principle (or "the 80–20 Rule") guided the development of the Program and its modules [24]. It addressed the question, "How can we deliver our health promotion messages in a culturally, linguistically, and personally aligned manner to the largest number of APIs and with the most efficient use of resources?" The Pareto Principle was met by reaching members of the API community at

the grocery store with culturally and linguistically aligned student interns, who deliver the messages in a personalized manner. The infrastructure of the *Asian Grocery Store-Based Cancer Education Program* is described in an earlier paper [17–21].

Selecting the Health Topic(s)

Following the HBM, only those cancer topics which exert great negative impact on the API community and for which there are solutions to reduce the threat were considered as potential health topics. Morbidity and mortality rates of various cancers were evaluated in the general U.S. and API populations to determine each cancer’s relative impact on the API population. Next, intervention options for the high impact cancer topics were weighed.

Using the Tipping Point model, a health topic became an even more relevant focus when environmental factors contributed to the uptake of recommended health actions by either reducing barriers or promoting behavioral change. Environmental factors can include greater mainstream dialogue about the health topic, the availability of funds to facilitate adherence to the recommended health actions, or endorsement of the health action by formal and informal community leaders.

Identifying Modifiable Risk Factors for Chosen Health Topic(s)

Following the Pareto Principle, the goal was to engage large numbers of APIs in at least a 30-second conversation to increase their awareness of liver cancer, to explain that there are specific behaviors they could practice in order to reduce their risk of developing and dying from liver cancer, and to give them a brochure with further information. Thus, risk factors that were feasible to alter with access to a modest amount of health information became the focus of the intervention. In past modules, modifiable risk factors were addressed by telling women how to get a free mammogram and helping them to overcome language barriers in accessing services [17–20], as well as telling people where they could access free smoking cessation counseling [21].

Generating “Sticky” Messages for Identified Risk Factor(s)

Finally, to be considered an optimal health topic, its selected risk factors must be personally relevant and conveyable via “sticky” messages. These messages needed to be customized to the audience’s cultural values, educational level, and language preference to be successfully understood and transmitted through the individual’s social network. Easy retention of messages by listeners is essential to generating repeated transmission of the sticky messages among API community members. Because outreaches would be conducted at Asian grocery stores, listeners are likely to be individuals for whom the API identity and cultural values remain salient. While acknowledging the diversity of ethnicities and immigration experiences among APIs, the traditional cultural values of collectivism and family centrality are shared by the broader API population [25–27]. Thus, “sticky” messages were developed around those themes.

Preliminary Testing of a Liver Cancer Control Module

A set of unobtrusive measures was selected to help evaluate the liver cancer educational module [28]. These included such variables as the outreach event’s venue, date, time,

duration, number of brochures distributed, and API communities served. While the module's materials were only offered in English for the preliminary testing, the students could explain the information in the language that was most comfortable for the learner. Hence, language of the students at each outreach event was recorded and anecdotal information about the ease of explaining the module's information in the alternate language was collected to confirm that the module had been tested with the most commonly-used API languages.

The student educators coded each engagement with API community members. An interaction was coded as a *brief message* when the students were able to tell an API community member that: (1) the API community has a disproportionately high incidence of liver cancer compared to the general American population; (2) screening for and vaccination against hepatitis B can reduce the risk of developing liver cancer; and (3) financial support for hepatitis B screening and vaccinations are available for low-income individuals in California. An interaction was coded as *in-depth* if the discussion included those points plus related issues, such as why APIs have a high risk of contracting hepatitis B. Rejections of the students' educational efforts were also recorded by the listeners' gender.

All adult APIs were eligible for this assessment of the liver cancer module. Since no data were collected from the learners, neither IRB approval nor consent of the participants was required.

RESULTS: DEMONSTRATION OF THE METHODOLOGY USED TO DEVELOP NEW MODULES

Selection of the Health Topic

Several cancers were identified as potential module topics. The finalists were liver cancer, pancreatic cancer, and retinoblastoma. They were evaluated against the three theoretical models. For example, according to the HBM, the chosen health issue must be *severe*, yet action should confer sufficient *benefits* through reasonable prevention or treatment options with early detection. While pancreatic cancer has a substantially higher incidence than retinoblastoma and a comparable mortality rate to liver cancer, there are currently no reliable treatments for pancreatic cancer [29]. Most treatments are palliative, and the long-term prognosis is currently bleak [30, 31]. Pancreatic cancer education would not provide improvement in health outcomes and, thus, was not appropriate as a module. Table 1 shows the factors that contributed to the selection of liver cancer as the focus of a new module.

Liver cancer disproportionately impacts the API population compared to the general U.S. population. Additionally, in contrast to pancreatic cancer, early detection of liver cancer offers considerably improved prognosis given that proven treatment options are now available [32]. There are also vaccines available to prevent hepatitis B and promising vaccines and treatments in clinical trials for hepatitis C [33, 34], both of which are significant risk factors for liver cancer. Clearly, for this module and the Program's other modules, where medical discoveries are rapidly advancing clinical care, the content must be regularly updated to assure delivery of the most cutting-edge information.

New clinical discoveries for liver cancer control will generate considerable media attention and paid advertisements. An educational module that raises awareness of liver cancer among API should improve access to future mainstream media attention to the topic, thereby helping to reduce the API community's language, cultural, and trust barriers to accessing health information.

Identification of Modifiable Risk Factors for Chosen Health Topic

Next, a list of modifiable risk factors for liver cancer was compiled. Table 2 shows the information used to evaluate each risk factor according to the Pareto Principle. Non-modifiable risk factors, such as genetic risk factors for liver cancer (e.g., hemochromatosis and $\alpha 1$ -antitrypsin deficiency), cannot be prevented or altered through education and, thus, were not considered.

Hepatitis C and alcoholic fatty liver disease significantly increase the risk of developing serious liver diseases, such as cancer and cirrhosis, but are primarily acquired through intravenous drug use and chronic alcohol abuse [35, 36]. The cessation of substance abuse is a complex process involving addiction and withdrawal management [37]. Persuading individuals to cease substance abuse requires effort beyond the scope of the Program's time, resources, and format. Non-alcoholic fatty liver disease (NAFLD) is another well-documented risk factor for liver cancer [38]. While studies show that reducing obesity decreases the risk of developing NAFLD [39], obesity management would likely require extensive nutritional and exercise counseling. Altogether, hepatitis C, alcoholic fatty liver disease, and NAFLD did not satisfy the Pareto Principle and, therefore, were not ideal risk factors to address.

In contrast, chronic hepatitis B infection, for which 50% of the U.S. patient population are API, is a major contributor to the development of liver cancer, but is easily preventable [40]. It is primarily transmitted from mother-to-child or through unprotected sex; transmission through either route can be prevented via vaccination [41]. Vaccination does not require substantial effort or lifestyle modification and eliminates the possibility of contracting hepatitis B, which in turn diminishes the risk of developing liver cancer. Convincing at-risk community members to be vaccinated could be achieved by providing information on vaccination requirements and community resources that offer free screenings and vaccinations for the uninsured. Preventing exposure to hepatitis B satisfies the Pareto Principle and, as a result, hepatitis B was considered an excellent focus for the liver cancer module.

The ultimate call-to-action of this module was to be sure that: (1) parents knew that the widely accepted recommendation was that children 18 and younger should be vaccinated and (2) patients should ask their doctors whether they are among the high risk group for whom the hepatitis B vaccine is highly recommended. To assure that this information was clearly delivered and easy-to-share, a brochure about the vaccine was developed and offered to every person who was approached with information. The number of those brochures accepted versus rejected became one of the unobtrusive outcome measures gathered, along with the time spent discussing the brochure and display.

Generation of “Sticky” Messages for the Risk Factor(s)

Finally, “sticky” messages were developed for the chosen risk factors. To make a message understandable, it is important to consider the educational level of the focus audience. The recipients of these call-to-action messages are API community members, many of whom may be recent immigrants whose primary language is not English. Given that the average U.S. literacy level is eighth grade, information related to the chosen risk factors is best conveyed at or below that level. A fifth grade reading level was selected as an optimal level to overcome education and language barriers.

Information on hepatitis B prevention and screening can be offered, including information about Centers for Disease Control’s (CDC) guidelines for hepatitis B vaccinations. The CDC recommends that all children up to age 18 and adults with the CDC’s clearly defined risk factors for hepatitis B should receive the hepatitis B vaccine series [42]. For example, hepatitis B screening and vaccinations are recommended for immigrants or travelers from countries where hepatitis B is endemic, and for people who live with someone who has hepatitis B. The CDC’s website offers a hepatitis chart that summarizes the key points that the public needs to know related to hepatitis A, B, and C [43]. Those salient points were included in the education module. Information was also provided about how people with limited income can access the vaccine series.

Accessible health information and trust of Western medicine are often limited in the API community. As a result, the earliest warning symptoms of liver disease, such as abdominal pain or nausea and vomiting can be missed. The module can deliver information about those symptoms, as well as later stage symptoms, such as yellowing skin/eyes and swelling of the feet and legs, all of which should be seen as signs to immediately visit a health care provider.

Cultural sensitivity also contributes to the stickiness of a message. For the API community, collectivism and family centrality are highly valued [25–27]. Thus, for hepatitis B, a call-to-action to be vaccinated could be focused on preventing the transmission of the hepatitis B infection throughout the family and community. Prevention of hepatitis B can help reduce the risk of liver cancer, thereby protecting one’s family and neighbors from this disease and premature death.

For this risk factor, an example of a non-sticky message would be, “Get vaccinated for hepatitis B.” Although this message is concise, it does not explain the purpose of the vaccination, personalize the message, or relay a sense of urgency. In contrast, “sticky” messages include, “Protect API children! Stop Hepatitis B!”, “Stop liver cancer in APIs! Get vaccinated!”, or “End liver cancer among APIs! Get vaccinated!” These messages suggest that the listener can make a significant communal contribution against liver cancer by simply getting vaccinated. These “sticky” messages invoke parental obligations and encourage listeners to protect the community’s children against a serious health problem through a simple act: “Protect API children from hepatitis B! Get them vaccinated!” Thus, these messages satisfy Gladwell’s principles for a compelling “sticky” message through their responsiveness to the API’s cultural values of family and community [25–27]. Generating

concise, informative, compelling, and culturally-specific messages increases the likelihood that the messages will “stick” with the listener and be passed on throughout the community.

Preliminary Outreach Findings

This module has been pilot tested in the API community during six two-hour outreaches. Of the 320 APIs who were approached with the liver cancer information, 187 (58.4%) were men and 133 (41.6%) were women. Of the men, 145 (77.5%) engaged in a brief discussion, 22 (11.8%) engaged in an in-depth discussion, and 20 (10.7%) men rejected the invitation. Of the women, 99 (74.4%) engaged in a brief discussion, 10 (7.5%) engaged in an in-depth discussion, and 24 (18.1%) women rejected the invitation.

The unobtrusive, observational data that were collected suggest that the new liver cancer module was well-received and perceived as relevant and appropriate for the API community. This receptivity was comparable to the earlier cancer modules the team had developed [17–21].

During the brief and in-depth discussions with members of the API community, the community members’ questions and suggestions for improving the program generated ideas for enriching the liver cancer module’s educational displays. Many people asked, “Where is the liver?” prompting the addition of a diagram of the body’s internal organs to the display. Other questions included, “What does the liver do?” and “Can you live without a liver?”

These comments led to the conclusion that the module had underestimated the API community’s need for the most basic information about the liver, its functions, and location in the body. Many learners asked for a brochure with basic information about the liver, hepatitis, and liver cancer to supplement the brochure about hepatitis B vaccinations. The learners also expressed their desire for a copy of the CDC’s chart that differentiated among the three types of hepatitis [43]. Both a basic brochure and the CDC’s chart have been added to the educational module’s take-away resource materials.

DISCUSSION

The *Asian Grocery Store-Based Cancer Education Program* is an evidence-based program proven to be effective for disseminating cancer and poison control information to the API community [17–21]. Building upon an existing, evidence-based health education program can be a cost-effective way to bring new resources to a community. Thus, it can be prudent to broaden the scope of sustainable models like the *Asian Grocery Store-Based Cancer Education Program*.

This paper demonstrates the steps to create educational modules that can be delivered by an existing infrastructure to address the unique health disparities faced by the API community. The Health Belief Model and the Tipping Model were used to identify health issues that disproportionately affect the API population and measures that could be taken to alleviate these threats among at-risk persons. Once it had been determined that curbing a particular health issue would lead to improvement in API health, modifiable risk factors and the environment relating to this health topic were analyzed under the guidance of the Pareto

Principle. This process helped to ensure that educational efforts would be focused on risk factors that contribute to reducing disease burden using limited resources and capacity.

Finally, calls-to-action against these modifiable risk factors were packaged as “sticky” messages that were concise, attention-grabbing, informative, compelling in a culturally-specific manner, and easily remembered and repeated. Altogether, this methodical approach to designing new cancer education modules for APIs has the potential to reduce the burden of health disparities affecting API communities. Furthermore, this approach can guide the expansion of the Program’s scope to address other health, welfare, and social justice issues.

Testing programs assures that they are accomplishing the intended objectives and constructed in an optimal manner. The pilot testing of this liver cancer module, for example, revealed the learners’ need for more basic information and desire for an additional summative brochure about the liver and liver cancer in general, with the brochure about hepatitis B vaccine serving as a supplement to the general liver cancer brochure.

CONCLUSION

This paper outlines the process that can be used to guide the development of new cancer education modules and demonstrates how the theoretical frameworks that underpin the Program are applied. Understanding and employing the elements of an existing evidence-based and sustainable health education program can increase the likelihood of success in addressing the health needs of underserved populations, such as the API community. Additionally, a program that relies upon the volunteer efforts of zealous, civic-minded student interns is likely to be among the least expensive to operate and the most culturally and linguistically aligned. Having an evidence-based educational module with information that is easy for students to master and consistently deliver will help to assure that students are not deviating from the intended content of the module. The authors also emphasize the importance of pilot-testing the educational module to be sure that it is optimally constructed for the community it is intended to serve.

Acknowledgments

The authors acknowledge the following funding support: National Cancer Institute [grant P30 CA023100]; the National Institutes of Health [grant U54 CA132379/U54 CA132384]; NCATS 5 TL1 TR001113 and UL1 TR001114 (PI: Eric J. Topol, M.D.) for John Tat; the Medical Student Training in Aging Research Program [grant National Institute on Aging T35 AG26757 (PI: Dilip V. Jeste, M.D. and the Stein Institute for Research on Aging at the University of California, San Diego)] for Molly Booy; and the Minority Training Program in Cancer Control Research [grant NCI R25 CA078583 (PI: Rena Pasick, Dr.P.H.; Co-PI: Marjorie Kagawa Singer, Ph.D.)] for Annie Le. The authors thank Kaitlin McCabe, Monica Sias, and Anh Tran for helpful advice during the preparation of this manuscript.

References

1. Sondik EJ, et al. Progress toward the healthy people 2010: goals and objectives. *Annu Rev Public Health*. 2010; 31:271–281. [PubMed: 20070194]
2. Smedley, BD.; Stith, AY.; Nelson, AR., editors. *Unequal treatment: confronting racial and ethnic disparities in health care*. National Academies Press; Washington D.C: 2008.
3. Williams DR. Miles to go before we sleep racial inequities in health. *J Health Soc Behav*. 2012; 53(3):279–295. [PubMed: 22940811]

4. Cohen, JA., editor. Challenges and successes in reducing health disparities: workshop summary 2008. National Academies Press; Washington D.C: 2008.
5. Agency for Healthcare Research and Quality. National healthcare disparities report. 2005. [cited 2014 August 3]; Available from: <http://archive.ahrq.gov/qual/nhdr05/fullreport/Index.htm>
6. Horowitz, C.; Lawlor, EF. Community approaches to addressing health disparities. In: Cohen, JA., editor. Challenges and successes in reducing health disparities: workshop summary 2008. Washington Academies Press; Washington D.C: 2008. p. 161-189.
7. Gany FM, Shah SM, Changrani J. New York City's immigrant minorities. Reducing cancer health disparities. Cancer. 2006; 107(8 Suppl):2071–81. [PubMed: 16983657]
8. Robertson EM, et al. African American community breast health education: a pilot project. ABNF J. 2006; 17(1):48–51. [PubMed: 16596901]
9. O'Brien MJ, et al. Community health worker intervention to decrease cervical cancer disparities in Hispanic women. Journal of General Internal Medicine. 2010; 25(11):1186–1192. [PubMed: 20607434]
10. Pollack H, et al. A comprehensive screening and treatment model for reducing disparities in hepatitis B. Health Affairs. 2011; 30(10):1974–1983. [PubMed: 21976342]
11. Wilson DS, et al. Establishing the infrastructure to conduct comparative effectiveness research toward the elimination of disparities: a community-based participatory research framework. Health Promot Pract. 2013; 14(6):893–900. [PubMed: 23431128]
12. Gee GC, Ford CL. Structural racism and health inequities: old issues, new directions. Du Bois Rev. 2011; 8(1):115–132. [PubMed: 25632292]
13. Brownson RC, Fielding JE, Maylahn CM. Evidence-based public health: a fundamental concept for public health practice. Annu Rev Public Health. 2009; 30:175–201. [PubMed: 19296775]
14. Fielding JE, Briss PA. Promoting evidence-based public health policy: can we have better evidence and more action? Health Aff (Millwood). 2006; 25(4):969–78. [PubMed: 16835176]
15. Division of Cancer Control and Population Sciences at the National Cancer Institute. Cancer control P.L.A.N.E.T. (Plan, Link, Act, Network with Evidence-based Tools). 2015. [cited 2015 March 19]; Available from: <http://cancercontrolplanet.cancer.gov/>
16. The Guide to Community Preventive Services. The community guide: what works to promote health. 2015. [cited 2015 March 19]; Available from: <http://www.thecommunityguide.org/>
17. Sadler GR, et al. Strategies for reaching Asian Americans with health information. Am J Prev Med. 1998; 14(3):224–8. [PubMed: 9569224]
18. Sadler GR, et al. Breast cancer education program based in Asian grocery stores. J Cancer Educ. 2000; 15(3):173–7. [PubMed: 11019767]
19. Sadler GR, et al. Then and now: comparison of baseline breast cancer screening rates at 2 time intervals. J Cancer Educ. 2009; 24(1):4–9. [PubMed: 19259858]
20. Sadler GR, et al. Promoting breast cancer screening among Asian American women: the Asian grocery store-based cancer education program. J Cancer Educ. 2012; 27(4):612–7. [PubMed: 23055131]
21. Tat J, et al. Disseminating tobacco control Information to Asians and Pacific Islanders. J Cancer Educ. 2014
22. Rosenstock IM, Strecher VJ, Becker MH. Social learning theory and the Health Belief Model. Health Educ Q. 1988; 15(2):175–83. [PubMed: 3378902]
23. Malcolm, G. The tipping point: how small things can make a big difference. New York City: Little, Brown and Company; 2000.
24. Pareto, VP.; AN. Manuale di economia politica (Manual of political economy). Kelley, Augustus M., editor. 1971. p. 504
25. Mjelde-Mossey LA, Walz E. Changing cultural and social environments: implications for older East Asian women. J Women Aging. 2006; 18(1):5–20. [PubMed: 16635947]
26. Uba, L. Asian Americans: personality patterns, identity, and mental mealth. New York City: The Guilford Press; 1994.

27. Yee, BWK.; Su, J.; Kim, SY.; Yancura, L. Asian American and Pacific Islander families. In: Tewari, N.; Alvarez, AN., editors. Asian American psychology: current perspectives. Psychology Press of the Taylor Francis Group; New York City: 2009. p. 298-308.
28. Webb, EJ.; CD; Schwartz, RD.; Sechrest, L. Unobtrusive Measures; revised edition. Thousand Oaks: Sage Publications Inc; 2000.
29. Yadav D, Lowenfels AB. The epidemiology of pancreatitis and pancreatic cancer. *Gastroenterology*. 2013; 144(6):1252–1261. [PubMed: 23622135]
30. Zhou Y. High-intensity focused ultrasound treatment for advanced pancreatic cancer. *Gastroenterol Res Pract*. 2014; 2014:205325. [PubMed: 25053938]
31. He J, et al. Management of borderline and locally advanced pancreatic cancer: where do we stand? *World J Gastroenterol*. 2014; 20(9):2255–66. [PubMed: 24605025]
32. Llovet JM, et al. Design and endpoints of clinical trials in hepatocellular carcinoma. *Journal of the National Cancer Institute*. 2008; 100(10):698–711. [PubMed: 18477802]
33. Lawitz E, et al. Sofosbuvir and ledipasvir fixed-dose combination with and without ribavirin in treatment-naïve and previously treated patients with genotype 1 hepatitis C virus infection (LONESTAR): an open-label, randomised, phase 2 trial. *The Lancet*. 2014; 383(9916):515–523.
34. Hepatitis C new drug research and liver health. 2014. [cited 2015 Mar 23]; Available from: <http://hepatitisnewdrugresearch.com/2014---treatment-of-hepatitis-c-in-the-near-future.html>
35. Yip B, et al. Clinical presentation and survival of Asian and non-Asian patients with HCV-related hepatocellular carcinoma. *Dig Dis Sci*. 2014; 59(1):192–200. [PubMed: 24282055]
36. Nelson PK, et al. Global epidemiology of hepatitis B and hepatitis C in people who inject drugs: results of systematic reviews. *The Lancet*. 2011; 378(9791):571–583.
37. Kosten TR, O'Connor PG. Management of drug and alcohol withdrawal. *New England Journal of Medicine*. 2003; 348(18):1786–1795. [PubMed: 12724485]
38. White DL, Kanwal F, El-Serag HB. Association between nonalcoholic fatty liver disease and risk for hepatocellular cancer, based on systematic review. *Clin Gastroenterol Hepatol*. 2012; 10(12):1342–1359.e2. [PubMed: 23041539]
39. Chitturi S, et al. Non-alcoholic fatty liver disease in the Asia-Pacific region: Definitions and overview of proposed guidelines. *Journal of gastroenterology and hepatology*. 2007; 22(6):778–787. [PubMed: 17565630]
40. Center for Disease Control and Prevention. Asian & Pacific Islanders: hepatitis B and APIs. 2014. [cited 2014 November 6]; Available from: <http://www.cdc.gov/hepatitis/populations/api.htm>
41. Mast EE, et al. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States. *MMWR*. 2005; 54(16):1–32. [PubMed: 16371945]
42. Center for Disease Control and Prevention. Hepatitis B vaccine information statements. 2013. [cited 2014 November 6]; Available from: <http://www.cdc.gov/vaccines/hcp/vis/vis-statements/hep-b.html>
43. Center for Disease Control and Prevention. The ABCs of hepatitis. 2014. [cited 2015 Mar 29]; Available from: <http://www.cdc.gov/hepatitis/Resources/Professionals/PDFs/ABCTable.pdf>
44. Altekruse SF, McGlynn KA, Reichman ME. Hepatocellular carcinoma incidence, mortality, and survival trends in the United States from 1975 to 2005. *J Clin Oncol*. 2009; 27(9):1485–91. [PubMed: 19224838]
45. Broadus E, Topham A, Singh AD. Incidence of retinoblastoma in the USA: 1975–2004. *British Journal of Ophthalmology*. 2009; 93(1):21–23. [PubMed: 18621794]
46. C.F.a.F. Special section: cancer in children and adolescents. 2014; 2014 [cited 2015 March 23]; Available from: <http://www.cancer.org/acs/groups/content/@research/documents/webcontent/acspc-041787.pdf>.
47. Llovet JM, Schwartz M, Mazzaferro V. Resection and liver transplantation for hepatocellular carcinoma. *Semin Liver Dis*. 2005; 25(2):181–200. [PubMed: 15918147]
48. Maingon P, et al. Stereotactic body radiation therapy for liver tumors. *Cancer Radiother*. 2014; 18(4):313–9. [PubMed: 24958684]

49. Zhang T, et al. Sorafenib improves the survival of patients with advanced hepatocellular carcinoma: a meta-analysis of randomized trials. *Anticancer Drugs*. 2010; 21(3):326–32. [PubMed: 20016366]
50. Shields CL, Shields JA. Transpupillary thermotherapy for choroidal melanoma. *Curr Opin Ophthalmol*. 1999; 10(3):197–203. [PubMed: 10537779]
51. Eguia V, Gonda TA, Saif MW. Early detection of pancreatic cancer. *JOP. Journal of the Pancreas*. 2012; 13(2):131–134. [PubMed: 22406583]
52. Grantzdorffer I, et al. Proteomics of pancreatic cancer. *Pancreas*. 2008; 36(4):329–36. [PubMed: 18437077]
53. Cancer.Net. Retinoblastoma - childhood: statistics. 2014. [cited 2014 December 22]; Available from: <http://www.cancer.net/cancer-types/retinoblastoma-childhood/statistics>
54. The Retinoblastoma Center of Houston. Retinoblastoma facts. 2011. [cited 2014 December 22]; Available from: <http://www.rbhouston.org/retinoblastoma.html#survival>
55. Ramirez-Ortiz MA, et al. Diagnostic delay and sociodemographic predictors of stage at diagnosis and mortality in unilateral and bilateral retinoblastoma. *Cancer Epidemiol Biomarkers Prev*. 2014; 23(5):784–92. [PubMed: 24521997]
56. American Cancer Society. Survival rates for liver cancer. 2014. [cited 2014 December 22]; Available from: <http://www.cancer.org/cancer/livercancer/detailedguide/liver-cancer-survival-rates>
57. Tamboli A, Podgor MJ, Horm JW. The incidence of retinoblastoma in the United States: 1974 through 1985. *Archives of ophthalmology*. 1990; 108(1):128–132. [PubMed: 2288550]
58. Swadling L, et al. A human vaccine strategy based on chimpanzee adenoviral and MVA vectors that primes, boosts, and sustains functional HCV-specific T cell memory. *Sci Transl Med*. 2014; 6(261):261ra153.
59. Nelson PK, et al. Global epidemiology of hepatitis B and hepatitis C in people who inject drugs: results of systematic reviews. *Lancet*. 2011; 378(9791):571–83. [PubMed: 21802134]
60. Weston SR, et al. Racial and ethnic distribution of nonalcoholic fatty liver in persons with newly diagnosed chronic liver disease. *Hepatology*. 2005; 41(2):372–379. [PubMed: 15723436]
61. Organization, W.H. Hepatitis C. 2014. [cited 2014 12–22]; Available from: <http://www.who.int/mediacentre/factsheets/fs164/en/index.html>
62. World Health Organization. Hepatitis C. 2014. [cited 2014 December 22]; Available from: <http://www.who.int/mediacentre/factsheets/fs164/en/index.html>
63. Fabbrini E, Sullivan S, Klein S. Obesity and nonalcoholic fatty liver disease: biochemical, metabolic, and clinical implications. *Hepatology*. 2010; 51(2):679–89. [PubMed: 20041406]
64. Zelber-Sagi S, Ratzin V, Oren R. Nutrition and physical activity in NAFLD: an overview of the epidemiological evidence. *World J Gastroenterol*. 2011; 17(29):3377–89. [PubMed: 21876630]
65. Sasaki A, et al. Bariatric surgery and non-alcoholic Fatty liver disease: current and potential future treatments. *Front Endocrinol (Lausanne)*. 2014; 5:164. [PubMed: 25386164]

Table 1

Selection of Liver Cancer as the Health Topic

Selection Criteria	Possible Healthy Topics for a New Module		
	Liver Cancer	Pancreatic Cancer	Retinoblastoma
Incidence in U.S. Population	5.1 per 100,000 [44]	13 per 100,000 [29]	11.8 per million children ages 0–4 years [45]
Incidence in API Population	11.7 per 100,000 [44]	10 per 100,000 [29]	3.1 per million children ages 0–19 [46]
Is there a Variety of Curative Options Available for Health Topic?	Yes Surgical resection and liver transplantation [47]; radiofrequency or percutaneous ethanol injection ablation [32]; radiation therapy [48]; systemic therapy [49]	No High-intensity focused ultrasound [30]; palliative surgical resection, chemotherapy, chemoradiotherapy [31]	Yes Enucleation, external beam radiation therapy (RT), radioactive plaques (I-125 brachytherapy), cryotherapy, laser photocoagulation, and chemotherapy [50]
What is the Prognosis of Early Treatment?	Good 5-year survival rate of 50%–70% (early stage HCC) vs 2-year survival rate of 8%–50% (intermediate or advanced stage HCC) [32]	Poor 5-year survival of 15–40% if diagnosed early enough to be surgically resectable [51]; 5-year survival is 40% if the tumor is detected at less than 20 mm and 75% when tumors are detected at less than 10 mm [52]	Good 5-year survival of 99% [53]; 95% of children with retinoblastoma are cured but may lose an eye [54]; diagnostic delay is associated with increased degree of extraocular spread in unilateral cases and increased mortality in bilateral cases [55]
What is the Overall Mortality Rate?	Disproportionately high [56]	Disproportionately high [29]	Disproportionately low [57]
Has the Environment Changed for Health Topic?	Yes More centers are doing liver transplants liver function screening. Hepatitis A and B vaccinations are available. New hepatitis C treatments are available and a hepatitis C vaccine is now being tested in a clinical trial [58].	No	No

Table 2

Identification of Modifiable Liver Cancer Risk Factors

Selection Criteria	Liver Cancer Risk Factors within the API Community			
	Hepatitis B	Hepatitis C	Alcoholic Fatty Liver Disease	Non-Alcoholic Fatty Liver Disease
Risk Factors for Liver Cancer among APIs	Disproportionately high [59]	Disproportionately high [59]	Unclear	Disproportionately high [60]
Preventability of Risk Factor	Primary-prevention with 3-dose vaccine [41]	Reducing risk of exposure (i.e., unsafe health-care settings, injection drug use, unprotected sex) [61]	Abstinence or moderation of alcohol consumption [62]	Dietary modification and physical activity [39]
Acquisition of Risk Factor	Blood or body fluids (sexual contact, injection-drug use, vertical transmission) [41]	Intravenous drug use; blood transfusions and sexual contact [35, 36]	Alcohol use [62]	Associated with obesity [63]
Lifestyle Changes to Modify Risk Factor	Minimal	Significant	Significant	Significant
Are there Curative Treatments and Preventative Medical Options Available?	Preventative options 3-dose vaccine [41]	Curative options Reducing risk of exposure [61]	Neither	Preventive options Prevention of recognized risk factors (obesity, type 2 diabetes, and hyperlipidemia) through diet [64]. Bariatric surgery has been shown to decrease grade of steatosis, inflammation and fibrosis [65].