

## Undergraduate Medical School Health Fair Hepatitis Screenings: Utilizing Non-Profit Community Organizations

### Abstract

**Background:** Undergraduate medical schools serve a critical role in providing screenings to medically underserved populations through the use of health fairs. Non-profit community organizations (NPCO) often participate by providing local credibility, administrative resources, and technical knowledge. Here we present a three-year narrative of hepatitis B and C screening efforts to highlight the challenges and benefits of undergraduate medical school and NPCO partnerships. **Methods:** Hepatitis screenings were conducted at biannual health fairs in Harlem, New York from 2017 to 2019. Meeting minutes from post-event debriefings were analyzed to identify any overarching themes with NPCOs. **Results:** NPCOs share a common goal in working with the community to advance their access to medical care and treatment. Communication and prompt follow-up are critical to maintaining expectations between NPCOs and health fair organizers. **Conclusions:** NPCOs can play an important role in encouraging, outreaching, and even managing hepatitis screening initiatives in conjunction with medical school health fairs.

**Keywords:** Chronic, health fairs, hepatitis B, hepatitis C, mass screening, medical students

### Introduction

Hepatitis C virus (HCV) is one of the major causes of morbidity and mortality globally, with over 180 million people infected at any given time.<sup>[1,2]</sup> HCV infection is classically diagnosed through an enzyme immunoassay that detects antibodies against HCV.<sup>[3]</sup> For under resourced and marginalized communities, receiving this screening and follow-up can prove difficult as HCV infection can be asymptomatic for decades at a time.<sup>[4]</sup>

Undergraduate medical student-led health fairs offer an important service in providing free health screenings to cover gaps in the American medical system.<sup>[5-7]</sup> Outreach to these communities, however, can be challenging due to distrust and barriers in language, transportation, and other structural factors.<sup>[8]</sup> Non-profit community organizations (NPCO) help to bridge the dichotomy between the two groups by providing local credibility, administrative resources, and technical knowledge at health fairs.<sup>[9]</sup> Here we present a three-year narrative of hepatitis B and C screening efforts to highlight the challenges and benefits of undergraduate medical school and NPCO partnerships.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: [reprints@medknow.com](mailto:reprints@medknow.com)

### Methods

Hepatitis B and C screenings were conducted at biannual health fairs of Touro College of Osteopathic Medicine (TouroCOM), a medical school based in Harlem, New York from 2017-2019 [Figure 1]. Facilitated by the school's Asian Pacific American Medical Student Association chapter, a non-profit national student organization that focuses on Asian and Pacific Islander health issues, three NPCOs have partnered in hepatitis education and screening during these health fairs. Each NPCO brought their own outreach team and handled the logistics and follow-up for hepatitis screening at the fair [Figure 2]. Meeting minutes from post-event debriefings were analyzed to identify any overarching themes and feedback with NPCOs. Approval from an ethics committee was not obtained as this study was exempt under the Institutional Review Board under guideline 45 CFR 46.102(d).

### African Services Committee (ASC)

Based in Harlem, Ethiopian refugees founded the African Services Committee to help bridge the gap between newcomers

**How to cite this article:** Chin J, Reyes AC, Chen C, Over A, Hsu E, Rich S, *et al.* Undergraduate medical school health fair hepatitis screenings: Utilizing non-profit community organizations. *Int J Prev Med* 2021;12:93.

Justin Chin,  
Ana Christina  
Reyes<sup>1</sup>,  
Connie Chen<sup>1</sup>,  
Alexandra Over,  
Elise Hsu<sup>1</sup>,  
Sushama Rich<sup>2</sup>,  
Christine Lomiguen<sup>3</sup>

*Department of Family Medicine, Lifelong Medical Care, Richmond CA, <sup>1</sup>Department of Primary Care, Touro College of Osteopathic Medicine, New York, <sup>2</sup>Department of Anatomy, Touro College of Osteopathic Medicine, New York, NY, USA, <sup>3</sup>Department of Pathology, Lake Erie College of Osteopathic Medicine, Erie, PA, USA*

### Address for correspondence:

Dr. Justin Chin,  
150 Harbour Way, Richmond  
CA 94801 USA.  
E-mail: [justinchindo@gmail.com](mailto:justinchindo@gmail.com)

### Access this article online

**Website:**  
[www.ijpvmjournal.net/www.ijpvm.ir](http://www.ijpvmjournal.net/www.ijpvm.ir)

**DOI:**  
10.4103/ijpvm.IJPVM\_68\_20

### Quick Response Code:



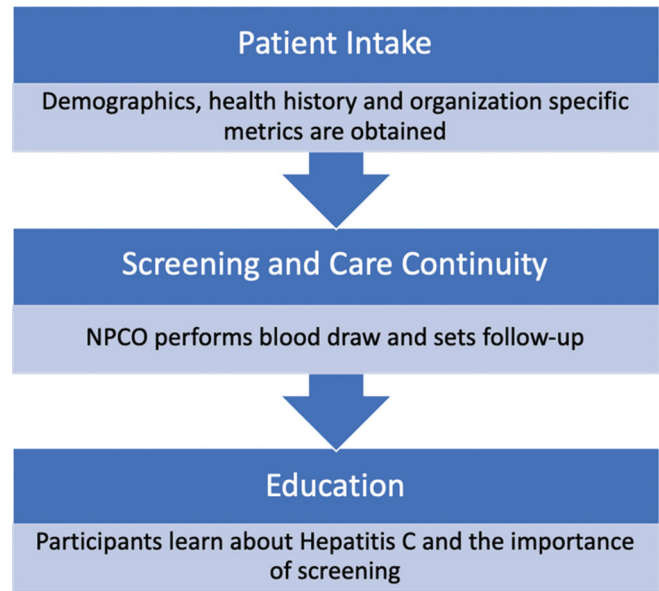


**Figure 1:** The Harlem community is a heterogeneous population that mimics the metropolitan nature of New York City. Within its boundaries, several large immigrant communities call this area home, including but not limited to Senegal, Côte d'Ivoire, Ghana, and Mali

from the African subcontinent to America, and has ultimately grown into a multiservice human rights agency that provides legal, social, and medical care to immigrants, refugees, and asylees in the African Diaspora.<sup>[10]</sup> Committed to challenging stigma and discrimination at all levels and supporting individuals, the ASC assists over 12,000 patients a year across its clinic sites and mobile outreach.<sup>[11]</sup> For the 2017-2018 health fairs, the ASC assisted TouroCOM with advertisement of the fair to the community in over 25 native African languages as well as performed hepatitis B and C screening with blood tests at the school. Undergraduate medical students assisted with registration, providing educational pamphlets, and setting up care continuity by giving directions for follow-up at the ASC clinic.

### Harlem United

Utilizing compassionate, client-centered care, Harlem United is a federally qualified healthcare center (FQHC) that has changed lives by helping marginalized communities in Harlem improve their health and well-being through primary and preventative care.<sup>[10]</sup> As a FQHC, the United States government subsidizes the cost allowing persons of all ages to obtain care regardless of their ability to pay or health insurance status. Comprised of primary care clinics, dental, mental health, and substance abuse services, Harlem United has had a 30-year history of engaging Harlem citizens to come together as a family to better the health of the community.<sup>[12]</sup> For the 2018-2019 health fairs, Harlem United brought a mobile health van to TouroCOM to provide hepatitis education and screening. Undergraduate medical students facilitated movement of patients from the main



**Figure 2:** General flow for NPCO health fair screenings with medical students primarily participating in intake and education

health fair to the offsite mobile van as well as registration and education regarding hepatitis. Care continuity was established with Harlem United to receive testing results.

### Hepatitis Outreach Network (HONE) at Icahn School of Medicine at Mount Sinai

Hepatitis Outreach Network (HONE) is a community viral hepatitis prevention, screening, and linkage to care group that focused on adult minority groups in New York City who are at risk for chronic hepatitis B and C viral infection.<sup>[13]</sup> In collaboration among members of The Mount Sinai Health System Division of Liver Diseases, Tisch Cancer Institute, and community physicians who care for minority patients, HONE offers combined HBV and HCV screening at no cost at a variety of health fairs and other events throughout New York City for the past decade. For the 2019-2020 health fairs, HONE brought a mobile health unit to TouroCOM to enroll patients in the study and provide hepatitis screening and treatment education at no cost. Undergraduate medical students assisted in registration and setup at the health fair. All follow-up was done through Mount Sinai health system.

### Results

From 2017 to 2019, 654 people had participated in TouroCOM's health fairs. 42 community members ultimately elected to undergo screening and subsequent follow-up with NPCO clinics/physicians for hepatitis screenings. Prior to this, in years without NPCO partnership, there have been no hepatitis screenings offered to the community.

On medical student feedback forms, the following advantages were identified: perceived community

legitimacy, administrative ease, and decreased liability. Disadvantages included difficulty in communication, high transition, and lack of care continuity.

## Discussion

Hepatitis C is a global disease in which its geographic distribution and prevalence varies based on its strain/genotype. According to the Centers for Disease Control and Prevention, 2.4 million Americans are chronically infected with HCV, however due to strained resources and gaps in health literacy, more than half are unaware or misinformed about their status.<sup>[14]</sup> Communities with large immigrant, non-English speaking, and/or low socioeconomic status tend to have the bulk of undiagnosed patients.<sup>[11,13]</sup> Antiviral therapy, such as sofosbuvir and simeprevir, has been shown to cure 95% of chronic HCV infection, thus preventing subsequent sequelae and dysfunction.<sup>[15]</sup> The barrier to treatment, however, is often obtaining the initial screening to receive a diagnosis.

Undergraduate medical student health fairs have been shown to be instrumental tools in providing this service for chronic diseases such as HCV infection, with dedicated time and additional funding to devote toward education, screening, and linkage to treatment.<sup>[5]</sup> Marginalized, minority communities are often hesitant to utilize such resources due to distrust of the medical profession, historic knowledge of research abuse, and inability to access routine care.<sup>[7]</sup> As seen with the African Services Committee and Harlem United, NPCOs that have roots and ties within the community thereby have the social capital and influence to advocate and bring members to health fairs.<sup>[11]</sup> In doing so, a culture of belonging and inclusivity is fostered between the undergraduate medical school and its surroundings, starkly contrasting the traditional “beacon on a hill” model associated with academic institutions as seen with the HONE program.<sup>[13]</sup> The “beacon on a hill” model describes the role that organizations play in shining a light on under resourced or underserved communities, which can become problematic for long term relationships. From a public health standpoint, the aforementioned screening events create additional opportunities for NPCOs to reach a larger number of new or transient community members in a short time span.

Despite the advantages and benefits that NPCOs bring to HCV infection screenings in undergraduate medical school health fairs, students identified various limitations and issues that required frequent revisions and follow-up. A primary area of friction underscored in all three organizations was difficulty in controlling the logistics and operation of the screening. Coupled with yearly student transitions/turnover, offsite locations, and operating hours that conflicted with student schedules, coordination and follow-up were difficult and at times protracted. There was also limited interaction between NPCOs and the undergraduate medical school outside of the health fairs,

which minimized community integration. Nevertheless, NPCOs, in conjunction with undergraduate medical school health fairs, serve as valuable mediators in improving HCV infection screening and care continuity.

## Conclusions

Hepatitis C is a global health problem and can be found in every country. However, there is a higher incidence and prevalence in Northern Africa & Eastern and Central Asia. In working with immigrant, non-English speaking communities, it is important to recognize the unique beliefs and practices that may impact the ability to interface with the American medical system. Medical student-run health fairs offer an opportunity to bridge the gap in health equality, however, can also run into challenges with interfacing with their communities. NPCOs, such as the ones listed, can provide a bridge between the community and medical schools, allowing for increase collaboration and improved health outcomes. Greater research is needed to understand how to best serve these communities in a respectful and culturally competent manner.

## Acknowledgments

The authors would like to acknowledge the Asian Pacific American Medical Student Association for their leadership in Asian and Pacific Islander health issues as well as the numerous medical students, non-profit community organization volunteers, and community members that have participated in the hepatitis screenings and health fairs.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

**Received:** 16 Feb 20

**Accepted:** 26 Sep 20

**Published:** 29 Jul 21

## References

1. Petruzzello A, Marigliano S, Loquercio G, Cozzolino A, Cacciapuoti C. Global epidemiology of hepatitis C virus infection: An up-date of the distribution and circulation of hepatitis C virus genotypes. *World J Gastroenterol* 2016;22:7824-40.
2. Wang LS, D'Souza LS, Jacobson IM. Hepatitis C-A clinical review. *J Med Virol* 2016;88:1844-55.
3. Mukherjee R, Burns A, Rodden D, Chang F, Chaum M, Garcia N, *et al.* Diagnosis and management of hepatitis C virus infection. *J Lab Autom* 2015;20:519-38.
4. Grannan S. Understanding patient perceptions and risk for hepatitis C screening. *J Viral Hepat* 2017;24:631-5.
5. Chin J, Otoole PJ, Lin JH, Lavalliere JM, Amine N, Milam A, *et al.* The effect of student-run vision screenings on ophthalmic education and recognition of visual impairment. *Soc Determ Health* 2018;4:117-23.
6. MacLean K, Hindman HB. UR Well Eye Care: A model for medical student ophthalmology education and service in the community. *Clin Ophthalmol* 2014;8:2397-401.
7. Murray K, Liang A, Barnack-Tavlaris J, Navarro AM. The

- reach and rationale for community health fairs. *J Cancer Educ* 2014;29:19-24.
8. Braveman P, Gottlieb L. The social determinants of health: It's time to consider the causes of the causes. *Public Health Rep* 2014;129(Suppl 2):19-31.
  9. Pannel CL, McLeroy KR, Burdine JN, Matarrita-Cascante D, Wang J. A mixed-methods approach to understanding community participation in community health needs assessments. *J Public Health Manag Pract* 2017;23:112-21.
  10. Lucas JW, Barr-Anderson DJ, Kington RS. Health status, health insurance, and health care utilization patterns of immigrant Black men. *Am J Public Health* 2003;93:1740-7.
  11. Shankar H, Blanas D, Bichoupan K, Ndiaye D, Carmody E, Martel-Lafferriere V, *et al.* A novel collaborative community-based hepatitis B screening and linkage to care program for African immigrants. *Clin Infect Dis* 2016;62(Suppl 4):S289-97.
  12. Terranova E, Tsoi B, Laraque F, Washburn K, Fuld J. Strengthening screening for HIV, hepatitis C, and STIs: An innovative partnership between the health department and community health centers in New York City. *Public Health Rep* 2016;131(Suppl 1):5-10.
  13. Perumalswami PV, Factor SH, Kapelusznik L, Friedman SL, Pan CQ, Chang C, *et al.* Hepatitis Outreach Network: A practical strategy for hepatitis screening with linkage to care in foreign-born communities. *J Hepatol* 2013;58:890-7.
  14. Chin J, Francis M, Lavalliere JM, Lomiguen CM. Osteopathic physical exam findings in chronic hepatitis C: A case study. *Cureus* 2019;11:e3939.
  15. Burstow NJ, Mohamed Z, Gomaa AI, Sonderup MW, Cook NA, Waked I, *et al.* Hepatitis C treatment: Where are we now? *Int J Gen Med* 2017;10:39-52.