

HIV and Sexually Transmitted Infection Testing Among High-Risk Youths: Supporting Positive Opportunities With Teens (SPOT) Youth Center

Katie Plax, MD, Jane Garbutt, MB, ChB, and Gaurav N. Kaushik, MD, MBBS, MPH

Sexual behaviors that contribute to unintended pregnancy and sexually transmitted infections (STIs), including HIV, are considered a priority health-risk behavior among youths in the United States.¹ In 2008, St. Louis, Missouri, had some of the highest rates of *Neisseria gonorrhoeae* and *Chlamydia trachomatis* infections of all US cities.² The majority of STIs in youths aged 15 to 24 years in Missouri are seen disproportionately among African American youths. HIV infection rates among youths continue to rise.³ From 2008 to 2010 new cases of HIV/AIDS among male youths in St. Louis increased by 33%, compared with a 2% increase among adult males.^{3,4}

These high rates of STIs and HIV highlight gaps in services for youths in our region. Evidence suggests that it is best to co-locate health and social services when providing care to a very needy population of youths.⁵⁻⁷ There are programs that do this in multiple sites across the country. Studies found that peer-to-peer information sharing and outreach, peer advisory groups, tightly linked medical and social services, and active case management to assess need and link youths to services were critical for keeping youths engaged.^{6,7} Despite the obvious needs of youths in St. Louis, no social service agency or health facility has ever combined these services for youths aged 13 to 24 years.

We describe the development of our youth center, the SPOT (Supporting Positive Opportunities with Teens), and report screening outcomes and service utilization measures for the first 5 years of the center. We focus on identifying STI and HIV infections in youths and ensuring access to timely treatment.

METHODS

Before developing our center, we conducted a literature search to identify best practices and national model programs for youths, including

Objectives. We investigated the development of and service utilization at Supporting Positive Opportunities with Teens (SPOT)—a community-based health and social service facility in St. Louis, Missouri, for youths that focuses on increasing HIV and sexually transmitted infection (STI) testing.

Methods. We identified the US-based, co-located youth health and social service models that guided the establishment of the SPOT. We analyzed the first 5 years (2008–2013) of service delivery and utilization data.

Results. During the study period, the SPOT provided services for 8233 youths in 37 480 visits. The 5 most utilized services included HIV and STI screening, food, transportation, contraception, and case management. A total of 9812 gonorrhea and chlamydia screenings revealed 1379 (14.1%) cases of chlamydia and 437 (4.5%) cases of gonorrhea, and 5703 HIV tests revealed 59 HIV infections (1.0%); 93.0% of patients found to have an STI were treated within a 5-day window.

Conclusions. Co-locating health and social services in informal community settings attracts high-risk youths to utilize services and can prove instrumental in reducing STI burden in this population. (*Am J Public Health.* 2015;105:1394–1398. doi:10.2105/AJPH.2015.302569)

homeless, runaway, lesbian, gay, bisexual, and transgender youths.⁵⁻¹⁴ We then conducted key informant interviews with the leaders of 8 youth-serving programs in the United States that we identified in our literature search (data available as a supplement to the online version of this article at <http://www.ajph.org>). Some of these leaders were founders of their programs. We chose the 8 programs from the examples in the literature as well as from discussions with leaders from the National Alliance to Advance Adolescent Health. We investigated only 8 programs because we were hearing repeated themes in the interviews.

We structured the interview guide to address practical issues for program start-up. K. P. and a pediatric resident conducted interviews. We compiled interview summaries on the basis of notes taken during the telephone interviews. K. P. and a social worker leader of the Ryan White Part D program in St. Louis noted the repeated themes. We visited 2 of the programs onsite: Larkin Street in San Francisco, California,¹⁵ and the Broadway Youth Center in Chicago, Illinois.¹⁶ We selected

Larkin Street because it was a longstanding youth program and the Broadway Youth Center because of its Midwest location. We were looking for practical advice on how the programs started, and we wished to see their services in action, to learn how they funded their work, and to obtain advice grounded on lessons learned in their own practice with youths.

During the telephone interviews and onsite visits, we identified several program elements that are critical when addressing youth HIV and STI risk. Interviewees consistently endorsed tightly linking the delivery of medical care with prevention and support services, in particular, linking medical care with prevention information on STIs and STI treatment; case management linking youths to other needed services, such as housing and workforce supports; and maintaining a safe drop-in space to welcome youths and enhance their ability to access services onsite. Other key elements we found in the model youth programs was comprehensive service provision, including mental health, case management, and substance abuse counseling; job access; strong partnerships with

other youth-serving organizations and public health departments; free and accessible services; a youth-friendly atmosphere; and a commitment to positive youth development.⁸

For our second objective, to examine the service delivery data, we collected and analyzed data from the electronic health record system at the SPOT. A custom electronic record system tracked all services, and staff providing the service entered the data.¹⁷ To assess use of STI and HIV testing and service utilization, we examined data from youths who received any SPOT services over 5 years, from September 2008 through September 2013. To access services, youths could walk in or make appointments. STI testing was offered to symptomatic and asymptomatic youths who requested it or when a medical provider encouraged testing.

Not all youths who came to the SPOT accessed medical services. Those who engaged in testing were provided this service on the basis of the Centers for Disease Control and Prevention guidelines.^{18,19} Those who tested positive for a STI or who were at higher risk as determined by the Centers for Disease Control and Prevention guidelines were encouraged to return within 3 months. All youths who received testing were asked to provide contact information for landline telephone, cell phone, texting, Facebook, and e-mail. With the youths' permission, we used this contact information to provide test results and arrange treatment of those who tested positive.

Youths with symptoms and asymptomatic youths with positive tests were treated free of charge at the SPOT, or prescriptions were called into a local pharmacy. Partner treatment was offered either onsite or with patient-delivered expedited partner treatment. We made reports to health departments in compliance with Missouri law. Any youths who tested positive for HIV were linked to the Linkage to Care case manager, part of a regional response to link newly diagnosed individuals into care, immediately after disclosure of results. Most of the time these encounters occurred in person, but if this was not possible or if the youth needed to leave, a connection was made by telephone, and in-person intake was arranged as soon as possible.

Since 2010 all youths screened for STIs were also screened for substance abuse using the CRAFFT.^{20,21} The American Academy of Pediatrics Committee on Substance Abuse for

use with Adolescents recommends this tool.²² Youths with a CRAFFT score of 2 or more were considered a positive screen and were referred to an onsite substance abuse counselor for further screening and evaluation. No other standardized screens were used.

For STI testing, both urine and cervical, nucleic acid amplification testing for *C. trachomatis* and *N. gonorrhoeae* were performed.^{23,24} Oral and rectal *N. gonorrhoeae* cultures were also available for men who had sex with men and for symptomatic individuals. Starting in April 2012 oral and rectal nucleic acid testing for *C. trachomatis* and *N. gonorrhoeae* was made available onsite. For HIV screening, OraQuick (OraSure Technologies, Inc., Bethlehem, PA) rapid testing was done, and for positive rapid tests, confirmatory Western blot assays were used. Rapid plasma reagent/fluorescent trap-nemal antibody absorption testing was done with blood samples.^{23,24} All laboratory specimens were collected, stored, and transported in a manner consistent with our laboratory and manufacturer specifications.

RESULTS

We developed our youth center, the SPOT, using best practices from other models.²⁴ The SPOT is located in St. Louis, Missouri, and is accessible by public transportation; all services are offered free of charge. Close community partnerships have been forged with St. Louis City, St. Louis County, and the State of Missouri Health Departments as well as with community organizations that serve youths. The SPOT is co-located with Project ARK (AIDS Resources and Knowledge), a Ryan White Part D program. This co-location advances the SPOT's goal of interagency coordination, offers youths single-stop availability of services, and avoids duplication of services and efforts.

Youth input was an integral part of the SPOT's commencement and program implementation. A youth advisory committee was formed to help in the process. Applications for youth leadership positions in the youth advisory committee were posted at Project ARK and distributed to community partners. Youths returned applications, and a follow-up telephone interview was conducted during which the need for a year-long commitment of service, which included monthly meetings, was communicated. Twenty youths

were selected for this role and participated in the hiring of all staff, space planning, logo design, and outreach efforts. Three youths were also employed as peer educators. A Web site and Facebook page were developed to inform the community about the presence of the agency and services provided; however, no marketing or recruitment campaign was conducted.

The SPOT opened in September 2008 to serve youths aged 13 to 24 years. Drop-in services allow youths to visit the SPOT, choose a snack in the kitchen, use a computer, and meet staff in an informal environment. Other services include adolescent and young adult medical services, mental health services, substance abuse counseling, case management, and job training. All services are provided free of charge. Staff includes social workers, counselors, a nurse, a health educator, and a medical director, for a full-time equivalent of 10. Health services include preventing, testing for, and treating STIs and HIV; reproductive health care; and linking youths identified as HIV infected or with other medical conditions to ongoing health care. Dental services are provided by a dental van 4 days a month, and psychiatry services are provided onsite by a psychiatrist and psychiatric nurse practitioner 1 day a week. Services are typically offered 1:00 to 5:00 PM Monday through Friday on a drop-in basis; however, appointments can be made for specific services.

In the first 5 years of service, 8233 youths received 1 or more services at the SPOT, for a total of 37 840 visits. The majority of the youths were African American and female. Detailed age, gender, and race/ethnicity characteristics of these youths are provided in Table 1. The SPOT served a sizeable vulnerable and at-risk population: 1195 (14%) identified as lesbian, gay, bisexual, or transgender, and 1174 (14%) had unstable housing (e.g., homeless, living in a shelter, couch surfing, transitional homes). We provided 125 531 units of service, including HIV and STI testing (25.1%), food (14.0%), contraception (4.8%), and transportation (4.0%; Table 2). We had anticipated seeing 500 youths in the first year and 1500 youths in the first 3 years. However, we have consistently seen more than 1500 new youths every year, with youths averaging 3 to 4 visits per year.

Results of STI and HIV testing are provided in Table 3. We conducted 9812 tests for

TABLE 1—Self-Reported Gender, Race/Ethnicity, and Age Distribution of Youths Seen at Supporting Positive Opportunities with Teens: St. Louis, MO, 2008–2013

Variable	Center Visit (n = 8233), No. (%)	Medical Visit (n = 6173), No. (%)	Case Management (n = 989), No. (%)	Substance Abuse Counseling (n = 592), No. (%)	Workforce Development (n = 583), No. (%)	Mental Health Counseling (n = 474), No. (%)	Psychiatry (n = 250), No. (%)
Gender							
Male	3100 (37.7)	2103 (34.1)	263 (26.6)	244 (41.2)	246 (42.2)	185 (39.0)	108 (43.2)
Female	5023 (61.0)	4027 (65.2)	706 (71.5)	345 (58.3)	332 (56.9)	243 (51.3)	134 (53.6)
Transgender (male-to-female)	35 (0.4)	21 (0.3)	11 (1.1)	1 (0.2)	3 (0.5)	7 (1.5)	1 (0.4)
Transgender (female-to-male)	46 (0.6)	15 (0.2)	6 (0.6)	1 (0.2)	1 (0.2)	35 (7.4)	6 (2.4)
Intersex or gender queer	12 (0.1)	7 (0.1)	3 (0.3)	1 (0.2)	1 (0.2)	2 (0.4)	1 (0.4)
Unknown or missing	17 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.4)	0 (0.0)
Race/ethnicity							
African American	6208 (75.4)	4675 (75.7)	799 (80.8)	427 (72.1)	522 (89.5)	261 (55.1)	128 (51.2)
Asian/Pacific Islander	69 (0.8)	62 (1.0)	4 (0.4)	4 (0.7)	0 (0.0)	4 (0.8)	0 (0.0)
Caucasian or White	1361 (16.5)	1076 (17.4)	127 (12.8)	119 (20.1)	35 (6.0)	166 (35.0)	93 (37.2)
Latino	22 (0.3)	17 (0.3)	3 (0.3)	0 (0.0)	1 (0.2)	3 (0.6)	3 (1.2)
> 1 race/ethnicity	283 (3.4)	233 (3.8)	41 (4.1)	34 (5.7)	10 (1.7)	30 (6.3)	18 (7.2)
Native American or American Indian	17 (0.2)	14 (0.2)	1 (0.1)	2 (0.3)	0 (0.0)	2 (0.4)	2 (0.8)
Other, unknown, or missing	273 (3.3)	96 (1.6)	14 (1.4)	6 (1.0)	15 (2.6)	8 (1.7)	6 (2.4)
Age at first visit, y							
13–16	1298 (15.8)	747 (12.1)	170 (17.2)	48 (8.1)	61 (10.5)	74 (15.6)	67 (26.8)
17–20	4356 (52.9)	3517 (57.0)	589 (59.6)	302 (51.0)	341 (58.5)	264 (55.7)	135 (54.0)
21–24	2441 (29.6)	2696 (43.7)	279 (28.2)	251 (42.4)	205 (35.2)	156 (32.9)	71 (28.4)
≥ 25	139 (1.7)	129 (2.1)	9 (0.9)	1 (0.2)	5 (0.9)	4 (0.8)	1 (0.4)

Note. Percentages are expressed as percentage of total in a service.

chlamydia and gonorrhea, 5703 HIV tests, and 6124 syphilis tests; 32.0% (n = 1975) of the youths reported never having STI testing before; 14.0% tested positive for *C. trachomatis*, and 4.5% tested positive for *N. gonorrhoeae*. Over the 5 years, 93.0% of youths with chlamydia, gonorrhea, or syphilis were successfully treated for their STI within a 5-day window. We contacted youths about treatment via social media or texting if they had listed these methods in their preferred contact information. Those with a newly identified HIV infection were referred to a Linkage to Care case manager, and 80% met with a case manager for further support, care, and services.

Seventy-five percent (n = 218) of patients with a positive pregnancy test were linked with the SPOT case managers to provide access to further services. Patients receiving medical services were screened for substance use during clinic registration starting in 2010. Of the 1635 youths who screened positive with the CRAFFT, 36% (592) were further evaluated

and agreed to receive substance abuse counseling services.

Although the majority of the youths (n = 6173) came for medical services, one fourth (n = 1766) also engaged in other SPOT services before and after receiving medical services. Table 2 lists the services provided by the SPOT and the units of services delivered.

DISCUSSION

The SPOT was developed to reduce barriers to accessing a range of medical and social services for St. Louis youths aged 13 to 24 years, with a special focus on STI and HIV testing and treatment. Within 5 years, the SPOT has become 1 of the top 5 sites in the St. Louis metropolitan region for identifying positive STI results.²⁵

The examination of service data over 5 years reveals several unique findings. First the co-location of a multidisciplinary team is highly successful in providing health and social

services to youths in our community. Second, although free medical services were a powerful draw into the center, more than one fourth of youths engaged in other services before or after their medical visit. Third, a low-threshold (free and walk-in), high-engagement strategy works well for this age group and is a strategy that can reach a high-risk population.²⁶ Finally, offering other desired services, such as food, bus tickets, and job training, makes the atmosphere particularly welcoming.

The SPOT services are youth focused and engage youths in every aspect of the program. Partnering with health departments, other youth-serving agencies, and youths themselves allows the SPOT to test and treat very high-risk populations and to avoid duplication of services. Using contact strategies that youths provided us to reach them with their STI test results, including social media and texting, as well as rapid onsite testing, helped us treat young people quickly while maintaining their privacy.

TABLE 2—Services and Units of Service at Supporting Positive Opportunities with Teens: St. Louis, MO, 2008–2013

Service	Units Delivered, No.
Total drop-in and direct services	125 531
Drop-in services (n = 72 073)	
Food	17 623
Computer or Internet	17 000
Transportation or metro tickets and passes	5 437
Clothes, laundry, shower, and hygiene supply	1 761
Legal, prevention counseling, or miscellaneous	713
Dental services	228
General drop-in services	29 311
Provider-facilitated services (direct services; n = 53 458)	
Medical	
Sexually transmitted infection testing (<i>Neisseria gonorrhoeae</i> , <i>Chlamydia trachomatis</i> , and syphilis)	25 748
Contraception	6 080
HIV testing	5 703
Pregnancy testing	4 661
Sexually transmitted infections treatment	4 162
Case management	2 761
Mental health counseling	1 785
Psychiatry	899
Workforce development and job search	871
Substance abuse counseling	788

Few youth programs have evaluated community-based health and social services or reported multiyear data in both the social service and medical realms.²⁷ The SPOT data have several advantages: they are readily available electronically, they can be used to demonstrate and track the quality of services (e.g., STI treatment), and, without disrupting staff workflow, providers and youth workers can see which services youths have used and which practitioners they have seen.

Several limitations to our study should be noted. Youth voluntarily provided data, so some items may be incomplete and prone to social desirability bias. Reliance on the electronic record system may mean data are underreported, as clinicians must input them into the system for them to be counted. Several of the services youths utilize do not require interaction with a service provider (e.g., using computers, taking food, obtaining safer sex kits and hygiene supplies), so

utilization is likely underreported. Data from other agencies were limited, and SPOT youths may have underreported their cross-utilization of services.

Ongoing challenges include obtaining sufficient funding to sustain our well-developed team because our services are offered at no charge.²⁸ To date, we have combined local, state, and federal grant funding as well as private foundation funding to deliver our wide array of services. We have also been supported by our hospital system, our medical school, and private donors. Offering accessible HIV testing means new cases are identified, so funding is also needed for ongoing services to sustain the health and well-being of HIV-positive youths.

Another challenge is the continual identification and engagement of youths to serve as leaders. As part of the effort to sustain and expand services, the SPOT is participating in the research and evaluation of clinic outcomes. Partnerships with university researchers in a wide variety of fields are important for understanding and maintaining our efforts.

The STI testing data underscore that this model works to provide care for youths engaged in high-risk sexual activity. The low-threshold, high-engagement health and social services environment is critical to the success of this initiative, which has also engaged youths in additional much needed care and services. Therefore, programs like the SPOT may be critical to reducing STI disparities in young people and changing health and well-being trajectories for high-risk youths in the United States.²⁹ ■

TABLE 3—Testing and Screening for Sexually Transmitted Infections Over 5 Years at Supporting Positive Opportunities with Teens: St. Louis, MO, 2008–2013

Test	Tests Conducted, No.	Positive Results, No. (%)
<i>Chlamydia trachomatis</i> infection	9812	1379 (14.0)
<i>Neisseriae gonorrhoeae</i> infection	9812	437 (4.5)
Rapid plasma reagin/fluorescent treponemal antibody absorption	6124	140 (2.3)
HIV infection	5703	59 (1.0)
Human chorionic gonadotropin	4661	218 (4.7)
Screen for substance abuse using CRAFFT ^a	4573	1635 (35.8)

^aStarted in 2010.

About the Authors

All of the authors are with the Department of Pediatrics, Washington University School of Medicine, St. Louis, MO. Jane Garbutt is also with the Department of Medicine, Washington University School of Medicine.

Correspondence should be sent to Katie Plax, MD, Adolescent Medicine, One Children's Place, Box 8116, St. Louis, MO 63110 (e-mail: plax_k@kids.wustl.edu). Reprints can be ordered at <http://www.ajph.org> by clicking the "Reprints" link.

This article was accepted January 12, 2015.

Contributors

K. Plax contributed to study conceptualization and design and data analysis. G. N. Kaushik contributed to data collection and analysis. All authors contributed to data interpretation and article writing and revising.

Acknowledgments

This work was supported by the Barnes Jewish Foundation, BJC Healthcare; the Missouri Foundation for Health; the St. Louis Children's Hospital Foundation; and the SAMHSA: Substance Abuse/HIV Prevention for Minority Youth Grant Cohort 7 (grant 14973).

Some of the data examined in this study were previously presented in a poster session at the American Public Health Association annual meeting; October 31–November 4; Denver CO; orally at the 2010 Ryan White Grantee Meeting; August 23–26, 2010; Washington, DC; and the Congressional Black Caucus Foundation Health Braintrust meeting; April 23–24, 2012; Washington, DC.

Special thanks go to Kim Donica, LCSW, Greg Storch, MD, Nicole Carr, RN, Alan Schwartz, MD, PhD, all the staff at the SPOT, and our public health colleagues in St. Louis, City, St. Louis County, and the state of Missouri. We also wish to thank all the youths who put their trust in us each and every day. Special thanks also go to Lissa McAnarney, MD.

Human Participant Protection

The Washington University School of Medicine internal review board provided approval to collect and analyze the study data (IRB ID 201109046).

References

- Eaton DK, Kann L, Kinchen S, et al. Youth risk behavior surveillance—United States, 2011. *MMWR Surveill Summ*. 2012;61(4):1–162.
- Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance, 2008*. Atlanta, GA; 2009.
- Missouri Department of Health and Senior Services. *2008 Epidemiologic Profiles of HIV, STD, and Hepatitis in Missouri*. Jefferson City, MO; 2008.
- Missouri Department of Health and Senior Services. *2008 epidemiologic profiles of HIV, STD and hepatitis in Missouri*. Available at: 2008StLouisHIVRegion.pdf. Accessed February 7, 2015.
- Bettencourt T, Hodgins A, Huba GJ, Pickett G. Bay area young positives: a model of a youth-based approach to HIV/AIDS services. *J Adolesc Health*. 1998;23(2, suppl):28–36.
- Feudo R, Vining-Betha S, Shulman LC, Shedlin MG, Burlison JA. Bridgeport's Teen Outreach and Primary Services (TOPS) project: a model for raising community awareness about adolescent HIV risk. *J Adolesc Health*. 1998;23(2, suppl):49–58.
- Woods ER, Samples CL, Melchiono MW, et al. Boston HAPPENS Program: a model of health care for HIV-positive, homeless, and at-risk youth. Human immunodeficiency virus (HIV) Adolescent Provider and Peer Education Network for Services. *J Adolesc Health*. 1998;23(2, suppl):37–48.
- Sandmaier M, Bell AD, Fox HB, McManus MA, Wilson JE. *Under One Roof: Primary Care Models That Work for Adolescents*. Washington, DC: National Alliance to Advance Adolescent Health; 2007.
- Judd B. *Incorporating Youth Development Principles Into Adolescent Health Programs: A Guide for State-Level Practitioners and Policy Makers*. Washington, DC: Forum for Youth Investment; Impact Strategies, Inc.; Alaska Department of Health and Social Services; 2006.
- Huba GJ, Melchior LA. A model for adolescent-targeted HIV/AIDS services: conclusions from 10 adolescent-targeted projects funded by the Special Projects of National Significance Program of the Health Resources and Services Administration. *J Adolesc Health*. 1998;23(2, suppl):11–27.
- Woods ER, Samples CL, Melchiono MW, et al. Initiation of services in the Boston HAPPENS program: human immunodeficiency virus–positive, homeless, and at-risk youth can access services. *AIDS Patient Care STDS*. 2002;16(10):497–510.
- Rosenfeld SL, Keenan PM, Fox DJ, Chase LH, Melchiono MW, Woods ER. Youth perceptions of comprehensive adolescent health services through the Boston HAPPENS program. *J Pediatr Health Care*. 2000;14(2):60–67.
- Schneir A, Kipke MD, Melchior LA, Huba GJ. Children's Hospital Los Angeles: a model of integrated care for HIV-positive and very high-risk youth. *J Adolesc Health*. 1998;23(2, suppl):59–70.
- Wright ER, Gonzalez C, Werner JN, Laughner ST, Wallace M. Indiana Youth Access Project: a model for responding to the HIV risk behaviors of gay, lesbian, and bisexual youth in the heartland. *J Adolesc Health*. 1998;23(2, suppl):83–95.
- Larkin Street Youth Services. Available at: <http://www.larkinstreetyouth.org>. Accessed February 7, 2015.
- Howard Brown Health Center. Available at: <http://www.howardbrown.org>. Accessed February 7, 2015.
- Network Ninja, Inc. Collaborate: collaboration software for teams. Available at: <http://www.collaboratesoftware.com>. Accessed February 7, 2015.
- Workowski KA, Berman S; Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2010. *MMWR Morb Mortal Wkly Rep*. 2010;59(RR-12):1–110 [Erratum in *MMWR Recomm Rep*. 2011;60(1):18. Dosage error in article text].
- Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2006. *MMWR Morb Mortal Wkly Rep*. 2006;55(RR-11):1–94.
- Knight JR, Sherritt L, Harris SK, Gates EC, Chang G. Validity of brief alcohol screening tests among adolescents: a comparison of the AUDIT, POSIT, CAGE, and CRAFFT. *Alcohol Clin Exp Res*. 2003;27(1):67–73.
- Knight JR, Sherritt L, Shrier LA, Harris SK, Chang G. Validity of the CRAFFT substance abuse screening test among adolescent clinic patients. *Arch Pediatr Adolesc Med*. 2002;156(6):607–614.
- Katz AR, Lee MV, Wasserman GM. Sexually transmitted disease (STD) update: a review of the CDC 2010 STD treatment guidelines and epidemiologic trends of common STDs in Hawaii. *Hawaii J Med Public Health*. 2012;71(3):68–73.
- Workowski KA, Berman SM. Centers for Disease Control and Prevention sexually transmitted disease treatment guidelines. *Clin Infect Dis*. 2011;53(suppl 3):S59–S63.
- The SPOT: Supporting Positive Opportunities with Teens. 2008. Available at: <http://thespot.wustl.edu>. Accessed August 1, 2013.
- Project ARK. Available at: <http://projectark.wustl.edu>. Accessed August 1, 2013.
- Society for Adolescent Health and Medicine. Promoting equity and reducing health disparities among racially/ethnically diverse adolescents: a position paper of the society for adolescent health and medicine. *J Adolesc Health*. 2013;52(6):804–807.
- Denno DM, Chandra-Mouli V, Osman M. Reaching youth with out-of-facility HIV and reproductive health services: a systematic review. *J Adolesc Health*. 2012;51(2):106–121.
- Slesnick N, Glassman M, Garren R, Tovissini P, Bantchevska D, Dashora P. How to open and sustain a drop-in center for homeless youth. *Child Youth Serv Rev*. 2008;30(7):727–734.
- Herbert CP, Thiel J. REACH youth night: the evolution of an adolescent drop-in clinic. *Can Fam Physician*. 1975;21(3):79–81.