Changing HIV Clinical Knowledge and Skill in Context: The Impact of Longitudinal Training in the Southeast United States

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In the Southeast United States, HIV care is provided in a context of disproportionate HIV prevalence and barriers to care, including rural locales, higher proportions of African American and uninsured patients, and inadequate health care workforce and infrastructure. The authors describe a regional on-site longitudinal training program developed to target multidisciplinary teams providing HIV primary care at clinical sites in the region. The effect of this training program was evaluated using pre- and 3-month post-program knowledge and skills tests, a post-training evaluation questionnaire, and a post-program focus group. The authors found desired effects, with increases in knowledge and skills and improved capacity of providers to meet patient care needs across all clinical sites despite variations in terms of HIV-infected patient loads. However, the lack of enabling factors present in clinic environments may attenuate the application of new knowledge and skills, underscoring the relevance of teamwork training in HIV care settings.

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The Southeast region of the United States bears a disproportionate burden of the HIV epidemic, with an estimated rate of new AIDS cases being approximately 27% higher than the national average in 2007 (Kaiser Family Foundation, 2009). In addition, the HIV-infected population in the Southeast experiences greater barriers to accessing HIV care compared with the general U.S. population (Andersen et al., 2000; Reif, Golin, & Smith, 2005), partly because of the high proportions of African Americans and inhabitants of rural areas (U.S. Census Bureau, 2010). Previous studies have shown that rural locales tend to lack health care providers who are experienced in managing patients with HIV (Heckman, Somlai, Kalichman, Franzoi, & Kelly, 1998). In the South, delayed HIV diagnosis and care are more common among rural, uninsured residents, and increasingly among African American females (Krawczyk, Funkhouser, Kilby, & Vermund, 2006). In addition to the higher proportions of African Americans, women, uninsured, and rural residents infected with HIV, the South also has higher rates of diabetes, stroke, infant

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mortality, sexually transmitted diseases, poverty, and unemployment than other regions of the United States (Reif, Geonnotti, & Whetten, 2006). States in the South have lower tax-bases than other regions of the country, resulting in inadequate health care infrastructure (Whetten & Reif, 2006). Indigent HIV-infected patients often rely on small, federally funded outpatient programs, such as Ryan White clinics, which are funded by the Ryan White HIV/AIDS Treatment Extension Act of 2009 (Ryan White Program [RWP], Health Resources and Services Administration [HRSA], 2010); Federally Qualified Health Centers; free clinics; or other safety net programs (Reif et al., 2006). Given the demands on the regional health care system, the authors hypothesized that an onsite, multidisciplinary, longitudinal training program would increase the capacity of HIV care and service providers in the Southeast to provide quality care to existing and newly diagnosed patients.

The Southeast AIDS Training and Education Center (SEATEC) is one of the 11 federally funded regional AIDS Education and Training Centers that provide targeted, multidisciplinary HIV education for health care providers (Health Resources and Services Administration, 2008). The primary mission of SEATEC is to meet the training needs of health care providers in Alabama, Georgia, Kentucky, North Carolina, South Carolina, and Tennessee who diagnose and manage patients with HIV, with a special focus on racial or ethnic minority and minority-serving providers, rural providers, and providers working in Ryan White-funded programs. Physicians, nurse practitioners (NPs), physician's assistants (PAs), nurses, dental professionals, and clinical pharmacists are targeted for training, and SEATEC specializes in tailoring trainings to meet the specific needs of these clinicians and their supporting staff. In response to the observed needs of the HIV health care workforce described earlier, SEATEC implemented a longitudinal training and evaluation program at selected HIV outpatient clinics across the Southeast to increase the knowledge and skills of multidisciplinary HIV care teams.

In addition to being attentive to the real-world context of HIV care and service provision in the Southeast, the SEATEC longitudinal training intervention is grounded in the rationale of adult learning theory using active learning methods (Silberman & Auerbach, 2006), which include clinically integrated teaching opportunities for health care professionals that have real-world application, are communal to facilitate peer support and generalization, and involve follow-up to support training transfer (Das, Malick, & Khan, 2008). The training program was implemented at each clinic site, with an aim to improve the HIV-related knowledge and skills of clinical and nonclinical service providers at community-based health centers. Clinical faculty had observed at the clinic that the work environment could affect the ability of trainees to apply new knowledge and skills, and this has been supported by literature on training transfer (Burke & Hutchins, 2007). Thus, under the SEATEC longitudinal model, the entire clinic team participated in didactic, skills-building, and case-based training sessions on a regular basis at the clinic site for at least 1 year.

Participating clinics used a multidisciplinary team approach to provide HIV care in the context of resource scarcity and therapies that have increased life expectancy for patients. Although multidisciplinary care teams are not new to HIV care, this approach is increasingly acknowledged as central to effectively managing chronic disease and general primary care practice (Rodriguez, Marsden, Landon, Wilson, & Cleary, 2008). Sherer et al. (2002) found a significant relationship between receipt of transportation ($p = .001$), mental health care ($p = .0005$), and chemical dependency counseling ($p = .036$), and receipt of any care or regular care in an urban, hospital-based HIV program. There was also a significant relationship between the receipt of case management and both an increased number of patient visits ($p = .005$) and improved retention in primary care (15%-18%).

Cheever, Lubinski, Horberg, and Steinberg (2007) described how a specialty model of HIV care that includes a multidisciplinary care team with an HIV specialist, case manager, clinical pharmacy support, social worker, benefits coordinator, mental health support, and health educator allowed for more efficient, comprehensive, and cost-effective HIV care. Although teams are susceptible to decreased individual efforts and suboptimal use of member skill and knowledge when member roles are redundant and not clearly defined, the team approach in chronic care has been shown to improve self-management, motivation, and treatment adherence in patients by including team members with these skills, leading