

Adherence to HIV Treatment and Care at a Rural Appalachian HIV Clinic

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Persons living with HIV (PLWH) in rural areas face different barriers to care and treatment adherence compared to persons in urban areas. Our project identified strategies used by a rural HIV clinic with high rates of viral suppression, as evidenced by data abstraction from medical records from January 2010 through December 2014, including 411 patients ages 18 years or older. As HIV viral load is used as a marker for adherence and impacts health outcomes and transmission, it is an important assay. The national goal is for 80% of PLWH to be virologically suppressed by the end of 2020. This clinic exceeded the goal in 2014 with observed rates of 80% to 90% suppression. Eleven national guidelines for HIV care have been adopted by this clinic, along with five additional evidence-based interventions. Nurses played a critical role in all of these methods, and our intent was to report success-related factors.

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Persons living with HIV (PLWH) continue to face challenges associated with unmet medical and social needs (Reif et al., 2014; U.S. Department of Health and Human Services [USDHHS], 2014). These unmet needs can place HIV-infected individuals at

risk for experiencing negative health outcomes such as decreased adherence followed by virologic failure (Saber et al., 2015; USDHHS, 2015c). According to the Centers for Disease Control and Prevention (CDC, 2014), an estimated 1.2 million people in the United States were infected with HIV at the end of 2011, with approximately 50,000 new infections each year. Of these newly diagnosed cases, nearly half resided in southern states, which included parts of Appalachia (CDC, 2011). These areas experience high levels of poverty, poor mental health, drug abuse, and uninsured persons, all factors that have

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been associated with increased risk of HIV infection and poor adherence to therapy (Reif et al., 2015; Reif et al., 2014). Limited opportunities for patient care in these areas reduced the availability of and access to antiretroviral therapy (ART), which is essential for improving the quality of life for PLWH (Esposito et al., 2015).

The goals of ART are to improve health and reduce HIV transmission (USDHHS, 2014). One way both goals are measured is by regular evaluation of HIV RNA in the plasma using polymerase chain reaction. This assay will hereinafter be referred to as the viral load (VL). A VL is defined as the quantity of HIV copies per milliliter of blood (CDC, 2015). According to national guidelines, a VL lower than 200 copies/mL is considered suppressed, and is an important indicator of an individual's response to treatment and is used as a proxy for adherence measurement (USDHHS, 2015c). ART adherence and subsequent viral suppression help patients achieve optimal clinical outcomes and reduce the risk of transmission, because persons with a lower VL are less likely to transmit the virus (Thompson et al., 2012). There are two reasons for treatment failure, or viral rebound: (a) a patient is nonadherent to ART, or (b) a viral mutation has occurred, reducing viral sensitivity to current prescribed medication (USDHHS, 2015c). While many methods have been attempted, no gold standard for adherence measurement has been recognized; therefore, as the VL is a reliable indicator and an easily obtained assay, it is relied on for adherence measurement (Chesney, 2006; Simoni et al., 2006; USDHHS, 2014).

Achieving viral suppression in PLWH is a national priority, as outlined by Healthy People 2020 (USDHHS, n.d.). An undetectable VL, or viral suppression, occurs when the amount of virus in the blood is lower than the threshold for detection in a polymerase chain reaction analysis. The percentage of patients experiencing virologic rebound within a clinical practice is commonly used as a marker for quality of care for PLWH (Althoff et al., 2014). The reasoning is that, with appropriate and careful treatment planning, patients will be more adherent, which is vital, as ART adherence requirements are more stringent than treatments for other health conditions.

With a disease impacting racial and ethnic groups in the United States at a disproportionate level,

culturally competent care is also required, and has been found to be directly related to patient perceptions of care quality and reduced VL (Saha et al., 2013). In 2014, the CDC reported that of persons receiving HIV care, only 68.5% achieved viral suppression (Dietz et al., 2014). Patients in rural and low-access areas faced multiple barriers to ART adherence and subsequent viral suppression (Ohl et al., 2013). Such barriers included distance to health care, limited availability of HIV care providers, limited peer support, and social stigma (Heckman, Somlai, Kalichman, Franzoi, & Kelly, 1998; Heckman, Somlai, Peters, et al., 1998; Reif, Golin, & Smith, 2005).

As in many clinics serving high-needs patients and vulnerable populations, the increased reliance on nurses to implement and uphold effective practice is becoming a new standard in the United States and globally (McNaghten et al., 2015; Wall, 2014). In the United States, physicians, on average, visit with patients for 19-21 minutes for specialized care (Shaw, Davis, Fleischer, & Feldman, 2014), affording them little time to cover adherence, prevention, psychosocial issues, and other important factors. To fill the gap, many nurses have assumed new roles in HIV care, sometimes exceeding previous levels in research, program implementation, and quality improvement. As HIV treatment cascades evolve, nurses play an increasingly important and far larger role in the provision of higher-level care, including the provision of ART medications, adherence, and field visits (Raper, 2014; Wilson et al., 2005).

While nursing and medical research has been presented and published on adherence in PLWH in urban populations, a gap exists in similar knowledge in rural areas. The objective of our project was to identify clinical services used in a rural patient population with an adherence rate of approximately 90%, as measured by the proportion of patients achieving viral suppression at their most recent test (Health Resources and Services Administration [HRSA], 2015; USDHHS, 2015b). We measured clinical outcomes and compared findings observed to national averages. The specific clinic from this project relied primarily on nursing staff for adherence, follow-up, patient calls, and quality management implementation. Identifying practices in a successful clinic could inform care in similar settings

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