The HIV/AIDS RD’s Role in a PCMH and the Community

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The health of people living with HIV/AIDS and the prevention of further disease transmission rely on ensuring that these individuals have access to sustained, good-quality medical care, including nutritional care. This has become a priority among HIV/AIDS service providers in the United States as well as the Centers for Disease Control and Prevention (CDC) because only about one-half of people diagnosed with HIV receive regular care. Additionally, only 28% of all people in the United States infected by HIV are virologically suppressed, meaning they maintain a viral load level of fewer than 48 copies/mL, which helps to prevent further transmission of the virus. Viral load is a test that measures the amount of HIV in the blood, and the goal is to reach undetectable levels.

According to the CDC, more than 1.2 million people in the United States are living with HIV, and almost one in five are unaware that they have been infected. When treated appropriately, HIV-infected people can have an almost normal life expectancy.

Many individuals with HIV come from groups that historically have been underserved, including minorities, people with a history of incarceration or IV drug use, and those of low socioeconomic standing with limited access to food. This has created significant barriers for people who fall into these categories to engage and remain in proper medical care. The fact that people with HIV continue to encounter a stigma associated with the virus compounds the problem, as these people often experience fear and shame that prevent them from seeking services, particularly dedicated HIV services.

The patient-centered medical home (PCMH) is an optimal care model for HIV patients, as it facilitates access to a wide range of services that could otherwise be inaccessible due to patients’ perceived barriers and social stigma. The PCMH generally is housed within an ambulatory, community clinic–like setting and is best described as a primary care facility that is comprehensive, coordinated, team oriented, and accessible.

The PCMH delivers physical and mental health care to patients, including prevention, wellness, and acute and chronic care, within a centralized location. Within this one-stop-shopping model, patients receive coordinated care and cross-referrals from an interdisciplinary team of providers who can collaborate and share patient information. According to the Agency for Healthcare Research and Quality, “This team might include physicians, advanced practice nurses, physician assistants, nurses, pharmacists, nutritionists, social workers, educators, and care coordinators” (see Figure 1 below). RDs can help patients with HIV by providing medical...
nutrition therapy (MNT) and nutritional counseling as well as facilitating patient access to food and connections to other services and resources offered both inside and outside of the PCMH.

Figure 1

This continuing education course explores the role of the HIV/AIDS RD within a PCMH and discusses the health and wellness programs these RDs can initiate both in the PCMH and the community.

Relationship Between HIV and Nutrition
HIV and nutrition share a complex relationship; both independently affect the immune system. As HIV disease advances, it progressively deteriorates the immune system. Conversely, good nutrition supports the immune system. Malnutrition, defined as a deficiency in micro- and macronutrients, can lead to immune dysfunction. Within the context of HIV, malnutrition is a marker of poor prognosis, as it further weakens an already compromised immune system and can increase patients' susceptibility to infections. Food insecurity can contribute to concerns such as malnutrition and obesity and negatively affect the HIV population.

Food insecurity is defined as “limited or uncertain access to foods of sufficient quality or quantity to sustain a healthy and active life” due to a lack of financial resources.\(^7\) Factors that contribute to food insecurity also contribute to obesity, such as poor education and limited nutrition knowledge, the low cost of energy-dense foods and the high cost of healthful foods, overconsumption of high-fat and -sugar foods, increased caloric density of processed foods, and limited access to affordable healthful foods.\(^8\) Food insecurity and obesity can also be linked to malnutrition when individuals consume a nutrient-deficient diet, regardless of weight.

Food deserts are a well-recognized phenomenon in the United States. They are defined as areas or neighborhoods that lack access to affordable, nutritious foods.\(^9\) Individuals who live far from supermarkets and don’t have access to transportation to reach these stores must rely on local bodegas and convenience stores, which typically offer foods that are highly processed, with limited options for fresh produce.
Research shows that individuals living in low-income neighborhoods also have less access to regular physical activity and organized sports due to safety concerns related to increased crime rates, traffic, or unsafe playground equipment in their communities. As a result, people living in these areas tend to spend more time indoors engaged in sedentary activities such as watching television or playing video games.\(^8\)

Several studies have looked at the relationship between HIV and food insecurity beyond the context of weight. A 2010 multivariable study by Kalichman et al looked at the impact of stress and poverty on antiretroviral medication adherence among a sample of 188 HIV-positive men and women with poor health literacy. The study found that poverty, as it relates to food insufficiency and hunger, reliably predicted antiretroviral medication nonadherence even more than did identified barriers such as depression, internalized stigma, substance use, and HIV-related social stressors. The health implications of poor treatment adherence include disease progression as measured by poor viral suppression, lower CD4 counts (a blood test that measures immune system health), and increased adverse HIV symptoms as the immune system weakens (eg, fatigue, weight loss, fevers, infections).\(^{10}\)

Ensuring sustained access to healthful foods and maintaining a high-quality diet should be considered an integral part of care for HIV-positive patients to improve their nutritional status and ensure treatment adherence. Understanding patients’ sociodemographic characteristics enables RDs to provide interventions with positive outcomes. As the CDC explains, “Monitoring the burden of the [HIV] epidemic among specific population groups provides guidance for targeting prevention and treatment efforts and allows assessment of intervention success.”\(^{11}\)

**Bridging Patient Care and Community Resources**  
As mentioned previously, the demographics and barriers to caring for the HIV population are varied and complex. RDs working with these patients are faced with the challenge of managing their chronic disease as well as mitigating the environmental factors that can potentially derail a healthful lifestyle. Mobilizing community efforts to reduce obesity, maintain a healthy weight, increase access to healthful foods, and improve patients’ lifestyles becomes a central and increasingly necessary role for RDs to fulfill.

Although there may be numerous resources available within a community that HIV-infected individuals can utilize, they often are fragmented and not readily familiar to patients. There lies an opportunity for RDs to coordinate access to various community resources to improve patient access to food and physical activity and to significantly enhance patients’ quality of life and bolster their commitment to overall health.

Chronic medical conditions such as HIV increase the complexity of care patients require, as treatment involves a larger number of providers and support services. Additionally, patients may have limited health literacy and self-management skills and often are part of a socially vulnerable population that’s exposed to multiple life stressors, such as low income, social isolation, abuse, and inadequate education, that can make proper care more difficult to achieve.
**PCMH Benefits**

One benefit of the PCMH is that its centralized location in the community and open communication with the medical team allows RDs to identify patients who need nutritional care, and it increases awareness for patients regarding available nutrition services.

The PCMH model allows care team members to easily transfer or access patient information such as medical histories, medication lists, and test results. It shifts away from fragmented medical care to a more coordinated and streamlined health care process, which minimizes the delay in patient care, increases access to care, improves patient outcomes, decreases hospitalizations, and lowers health care costs. The level of coordinated care needed is based on patients’ health care requirements and treatment recommendations, taking in to account their current physical, psychological, and social needs.\(^{12}\)

The CDC reviewed 58 studies that evaluated the PCMH’s effectiveness within the primary care setting and found the potential for this model to reduce costs largely because of fewer hospitalizations and emergency department visits.\(^{13}\) Additionally, the recently enacted Affordable Care Act encourages the use of the PCMH model because of its emphasis on coordinated care and preventive medicine to minimize hospitalizations.\(^{14,15}\)

In the current health care system, there’s often a revolving door of providers, which leaves patients frustrated by the inconsistency of care and the lack of an ongoing patient-provider relationship. The PCMH coordinated care model can simplify the health care process and help patients overcome barriers to care.

A 2006 cross-sectional analysis involving 1,743 HIV patients analyzed whether they were more likely to adhere to their highly active antiretroviral therapy (HAART) regimen and have an undetectable viral load when they felt that their provider "knows me as a person." The study found that when patients felt they had personal relationships with their providers, they were more likely to purchase their medications, take them as prescribed, and have undetectable viral loads. Such patients also reported a higher quality of life and more positive attitude toward their HAART, and they reported less stress, fewer incidents of substance abuse, and fewer missed medical appointments, plus they demonstrated a longer history at their respective health clinics.\(^{16}\) Based on this analysis, efforts to improve HIV patients’ overall health should take into account the quality of patient-provider relationships.

In the current health care system, which is more fractured, patients must manage and organize much of their own medical care and follow-up. If patients perceive barriers or aren’t highly functioning, they may not receive timely care, and their adherence to medical treatment may be hindered. In fact, delayed health care is a common concern for HIV patients, who are more likely to have limited income, lack medical insurance, and have a limited ability to comprehend health information.\(^{17}\) The cornerstone of the PCMH is that patients are seen as unique individuals, and treatment options are tailored around their medical needs and preferences. Patients shift from being passive care recipients to active ones.
Illiteracy also can deter patients from seeking medical care for fear of having to fill out paperwork. A 2006 article published in *The New England Journal of Medicine*, which looked at the health effects of illiteracy, found that patients with low literacy levels were more likely to be in poor health and have chronic illnesses such as diabetes or heart disease compared with those with higher rates of literacy. It also found that patients often seek out care at the emergency department, as opposed to a physician’s office, because they generally are asked questions verbally instead of having to fill out forms.\(^\text{18}\)

A study specific to HIV-positive individuals found that patients with limited literacy were less likely to adhere to their HAART due to difficulties reading medication instructions and tracking scheduled medication doses.\(^\text{10}\) Patients experience less shame or intimidation when they feel connected to their health care providers and are more likely to go to their scheduled health care visits instead of using the emergency department.\(^\text{18}\)

**MNT**

MNT is a therapeutic approach to treating medical conditions and their associated symptoms with specifically tailored diets designed to meet patients’ individual needs. MNT for HIV patients, which incorporates nutritional assessment and diagnosis, intervention with a nutritional care plan, and nutritional counseling, has been shown to improve patient outcomes related to food intake, weight gain, CD4 count, and general well-being.\(^\text{19}\)

According to the Academy of Nutrition and Dietetics, the coordination of care approach “is necessary to effectively integrate MNT into overall management for people with HIV infections.”\(^\text{20}\) For RDs, this involves open communication with patients’ primary care providers and health care teams to better grasp the patients’ physical, psychosocial, and socioeconomic status. RDs should implement MNT and coordinate care with both the interdisciplinary team and community resources,\(^\text{20}\) such as food assistance programs, support systems, and recreational facilities for physical activity.

**Food Banks and Soup Kitchens**

As noted previously, food insecurity often contributes to poor nutritional status in HIV patients. It can exacerbate macro- or micronutrient deficiencies and immunologic decline as well as increase the risk of obesity, morbidity, and mortality.\(^\text{21}\) Poor nutritional status, or malnutrition, can affect both underweight and overweight patients with diets that are nutritionally deficient. For this reason, food-based interventions shouldn’t just address patients’ immediate clinical concerns but also their long-term access to healthful foods to improve their nutritional status. In short, healthful eating principles can only be followed when people have access to healthful foods.

Food banks and soup kitchens provide free meals and food supplies to food-insecure households across the United States, which can include people diagnosed with HIV. In the past, these organizations generally have emphasized quantity as opposed to quality, which has allowed for nutrient-poor and calorie-dense foods such as candy and soda to be included in the items distributed by these emergency food centers. Although these supplemental foods help to fill a void for many low-income families, they also contribute to a nutrient-deficient diet that may be adequate in terms of calories but inadequate in terms of good nutrition.
A recent study published in the *Journal of the Academy of Nutrition and Dietetics* that assessed the nutritional policies and practices of 20 food banks across the United States found that food banks now have started responding to the growing obesity epidemic by improving the nutritional quality of the foods distributed. They’re looking to provide more fresh produce and fewer unhealthful products. The study also found that some clients from a food bank in New York preferred to "receive meat, poultry, fish, vegetables, and fruit instead of soda, candy, and snack foods."  

This rise in health consciousness can help pave the way for food-insecure individuals to receive foods of high nutritional value that will help reduce their risk of malnutrition and diet-related diseases.

**Community-Based Resources**

A significant and valuable role of RDs within the PCMH is forging relationships with community-based programs or helping to establish new programs in order to benefit patients.

RDs can provide nutrition support, develop nutrition education programs that teach basic cooking and food safety skills, demonstrate how to shop on a budget while navigating the aisles of a supermarket, and encourage individuals to engage in regular physical fitness programs. In addition to the PCMH, these services can be provided in alternative settings such as substance abuse programs, methadone clinics, smoking cessation programs, transitional housing, group homes, and low-income housing projects.

As RDs provide these programs outside the PCMH, they can help to create a bidirectional bridge between community-based resources and the PCMH (see Figure 2 below).

*Figure 2*
The following are programs RDs can develop and patients can access through community-based resources:

**Group Education Classes**

Group education classes allow RDs to access a larger audience for nutrition education, and they serve as a safe, supportive environment in which patients can share their feelings about living with HIV, which often is an isolating experience.

It’s important to reach out to community-based HIV/AIDS service organizations and offer to provide free classes to their patients. This is an opportunity for RDs to increase awareness of nutrition’s importance to health, the availability of nutrition services within the community, and how to access an RD for consultation. Topics of discussion can include food safety, portion control and food variety, food and medication interactions, and ways to limit sugar, fat, and salt in the diet due to potential comorbidities such as diabetes, hyperlipidemia, and hypertension.

**Cooking Classes**

Cooking classes that teach patients how to prepare easy, quick, and convenient meals that are affordable and taste good are another way to reach a large number of patients. Cooking classes can address food safety, an important topic in light of patient’s compromised immune systems, as well as kitchen hygiene issues such as proper hand washing and the risk of cross-contamination when handling uncooked produce and raw meats at the same time, for example. Using familiar ingredients in combination with new foods and flavors can help expose patients to new cooking ideas in the kitchen.

RDs should focus on cooking tips that patients easily can replicate at home, keeping in mind that some patients may have limited cooking facilities and/or utensils in their homes as well as limited food budgets. RDs who don’t have access to a teaching kitchen can focus on meals that require prep but not cooking, such as brown-bag lunches, smoothies, snacks, and salads. However, they also can reach out to local YMCAs, which may have on-site kitchens, or ask local restaurants if they will donate their time and facilities to help others.

**Government Food Assistance Programs**

RDs can help patients determine whether they’re eligible for government-sponsored supplemental food programs such as the Supplemental Nutrition Assistance Program (formerly known as the Food Stamps Program), WIC, the National School Lunch Program, or Meals on Wheels.

**Local Food Centers**

RDs can provide information on local food pantries and soup kitchens that can help patients supplement their monthly food budgets and improve their dietary intake. Some area emergency relief centers provide not only food but also clothing, diapers, and cooking items. Patients should be given the addresses, days and hours of operation, and referrals to these centers, if required.
Patients who are illiterate or not fluent in English may be deterred from going to these centers for fear of having to fill out paperwork. RDs can meet these patients on site to help facilitate registration.

**Supermarket Tours**
Supermarket tours are perfect for teaching patients how to shop using store coupons and circulars, comparing unit prices of similar items to find the best deals, and buying foods in bulk when possible to save money. Supermarkets also are an ideal place to teach patients how to read the Nutrition Facts label on food products.

RDs also can reach out to store managers to try to obtain donations of overstocked food and supplements that may otherwise be discarded.

**Nutritional Supplements**
RDs should assess patients’ needs for nutritional supplements that provide additional calories and protein, especially for those who are underweight or malnourished. Patients also should be assessed for vitamin and mineral supplementation, taking into account their current dietary intake and biochemical data. Commonly recommended supplements for the HIV population include a daily multivitamin, B complex, omega-3s, calcium, vitamin D, probiotics, and iron.

**Exercise Classes**
RDs can contact local gyms or the YMCA to organize free or reduced-rate exercise classes for patients. RDs can ask the instructors to teach patients simple exercises that they can do in the comfort of their own homes. Resistance exercises have been shown to improve lean body mass and bone strength, and aerobic exercises help stimulate appetite, promote weight loss, improve insulin sensitivity, increase energy levels and general well-being, and reduce blood pressure, cholesterol, and triglyceride levels.

**Community-Supported Agriculture**
RDs can check out local community-supported agriculture organizations that patients can join to receive a monthly supply of fresh, local, and organically grown produce. This will help reinforce the concept of farm to plate, help patients gain a newfound appreciation of where food comes from, and expose them to new fruits and vegetables they may otherwise never have tried.

**Farmers’ Markets**
RDs can provide patients with the locations and hours of operation for area farmers’ markets. This is another opportunity to help patients appreciate fresh produce and introduce them to new foods.

RDs also can find out whether the local community provides any assistance or incentives to buy at farmers’ markets or related facilities. For instance, the New York City Health Department offers Health Bucks, worth $2 each, that can be used to purchase fresh fruits and vegetables at all farmers’ markets in the New York City area. The city’s farmers’ markets also accept food stamps.
Medication Guidance
RDs can join forces with local pharmacists to educate patients on how best to take their medications. Some antiretroviral drugs must be taken on an empty stomach, and some need to be taken with food to maximize efficacy. Many of the medications also cause unpleasant side effects, such as headache, nausea, vomiting, and diarrhea, which can deter patients from taking their medications regularly. RDs can provide dietary tips for relieving some of these adverse effects, and pharmacists can provide prefilled weekly pillboxes to make it easier and simpler for patients to adhere to their medication regimens.

Substance Abuse and Smoking Cessation Programs
RDs should find out whether local substance abuse programs have HIV groups that meet regularly. This is a great opportunity to meet patients within the community and offer them free nutrition education classes. RDs also should contact local hospitals, clinics, and substance abuse/rehabilitation facilities to see whether they offer smoking cessation classes that patients can attend for peer support or that can be provided on premises.

Making an Impact
HIV infection often is associated with low education level, poverty, unemployment, homelessness, substance abuse, and psychological illness, all of which pose barriers to improving nutritional status, accessing services, and obtaining healthful foods. Maximizing available resources will be important as well as ensuring that as many people who need these resources have access to them. The PCMH model further facilitates patient access to medical care and the potential for referrals to a wide range of interdisciplinary providers.

In addition to applying their clinical and consultative expertise, RDs should take advantage of community resources that can help their clients improve lifestyle choices related to nutrition and exercise. Many of these resources may not be familiar or readily accessible to the HIV-infected population because of the many social and economic barriers outlined in this article. RDs serve as a bridge between community resources and the PCMH and can help patients access and use available programs and receive important health benefits. Collaboration among agencies and communication among health care providers will help increase access and improve quality of care.

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Click here for the tip sheet “RDs’ Role in PCMH HIV Treatment.”
References


Examination

1. Which of the following is a common barrier for the HIV population regarding receiving care and remaining in treatment?
   A. Substance abuse
   B. Time constraints
   C. Sexual orientation
   D. Well-controlled HIV status

2. A patient-centered medical home (PCMH) includes an interdisciplinary team of providers in one location that offers patients acute and preventive care as well as referrals for mental health or nutritional consultations.
   A. True
   B. False

3. Coordination of care within the PCMH refers to which of the following?
   A. Being able to interface with patients via social media
   B. Having the ability to schedule patient appointments without a referral
   C. Having easy access to patient information, such as medical history and test results
   D. Being able to coordinate patient appointments in various locations

4. Patients who are food insecure are more likely to be underweight.
   A. True
   B. False

5. RDs have numerous roles within a PCMH. Which of the following is an example of one of the most important interventions an RD can perform?
   A. Mobilize community resources to improve patient access to healthful food and physical activity
   B. Provide patients with drug adherence counseling
   C. Coordinate connections to services outside of the community
   D. Assist patients in finding suitable housing with a functional kitchen for food preparation

6. Which of the following is an example of a community program or activity RDs can develop to improve patients’ ability to read food labels?
   A. Conduct local supermarket tours with patients
   B. Help patients fill out their food stamps applications
   C. Provide patients with a tour of local farms and community-supported agriculture
   D. Offer a nutrition class covering a low-sodium diet plan

7. Within the PCMH, RDs can link patients who are receiving medical care to appropriate community resources to assist with immigration applications as well as affordable housing information.
   A. True
   B. False
8. Cooking classes provide a good opportunity for which of the following?
A. Patients to bring in foods that they cooked at home for everyone to sample
B. RDs to demonstrate easy ways to prepare healthful, exotic foods purchased from local specialty markets
C. RDs to teach food safety and cross-contamination risks in the kitchen
D. RDs to discuss the many uses and functions of different cooking utensils and appliances

9. Which of the following nutritional supplements is routinely given to HIV patients?
A. Omega-3s
B. Milk thistle
C. St John’s wort
D. Herbal teas

10. A good way to locate HIV-positive patients in the community who require nutritional care is to look for them in places where they already meet regularly. Which of the following is the best example of such a place?
A. Substance abuse programs
B. Emergency departments
C. Unemployment offices
D. Schools