

# Positive Communication

A Quarterly Newsletter of the Infectious Diseases Nutrition Dietetic Practice Group

## HIV/AIDS and Health Disparities: A Rawlsian Approach

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By Earl Pike, CEO, AIDS Taskforce of Greater Cleveland, Ohio, author, and adjunct faculty, Mandel School of Applied Social Sciences, Case Western Reserve University

The concept of health disparities is both rigorous and ambiguous. Its rigor is its capacity to underscore a morally outrageous reality: health, life, and death are profoundly conditioned by an array of political, policy, and operational decisions made by human beings and operationalized by human-made systems and processes. Its ambiguity stems from its definitional fluidity. Health disparities are related to areas and potential causes as varied as access to care, standards of care, and geography. The population or individual experience of disparities is profoundly conditioned by identity: race and ethnicity, socioeconomic class, gender (and gender nonconformity), sexual orientation, age, and many other facets of identity.

If we accept that health disparities—whether they are acceptable, and if not, how they may be reduced or eliminated—are rooted in morality and ethics, then we should begin with an overarching moral philosophy that provides an evaluative framework for judgment and action. On the subject of justice and equality, John Rawls has framed the following philosophical thesis:

“All social values—liberty and opportunity, income and wealth, and the social bases of self-respect—are to be distributed equally unless an unequal distribution of any, or all, of these values is to everyone’s benefit.” (1)

It is a deceptively simple, and simultane-

ously radical, prescription. First, Rawls posits as the subject matter in question, what is to be distributed, as not merely a catalog of commodities or set of aspirations (such as, “everyone should have access to health care”) but something far more profound: “all social values.” Even a simple enumeration of common social values is likely to include a long list of items generally not considered in discussions of fairness and equality, and Rawls is deliberate in his use of a term that invites broad and fully inclusive definitions. But a short list of social values, however, will certainly include health. The list will also certainly include values related to and determinants of health: nutritious food and safe, non-toxic housing, clean water, and so forth. It is apparent how demanding the Rawlsian injunction is.

Second, Rawls is forthright in his assertion that an unequal distribution is intrinsically flawed, unless the inequality “is to everyone’s benefit.” In the case of HIV/AIDS and health or sickness, the application is significant. The Rawlsian proposition would require that the same treatment formulary be available to everyone, regardless of geography or identity, unless an unequal allocation benefits a greater number of people. It is difficult to justify how an unequal distribution of anti-retroviral medications (ARVs) is beneficial. Universal access to a standard formulary is hardly the case at present. There is tremendous

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Newsletter Editor

Jenny Torino, MS, RD  
jennytorino@mac.com

Newsletter Co-editors

Alison Mittelsteadt, MS, RD  
alison.mittelsteadt@case.edu  
June Pierre-Louis, PhD, MPH, CDN  
junepierrelouis@yahoo.com

Web master

Laura May, MEd, RD  
Yale21@aol.com

Public Policy

Deane Edelman, MBA, DTR  
publicpolicy2@hivaidsdpg.org

## Letter from the Newsletter Co-Editors

Dear IDN DPG Newsletter Readers:

We are pleased and excited to be the new editors of Positive Communication. We are hoping to keep your interest with the range of topics that are showcased and explored in each issue.

In the Winter 2009 issue you will find information on the nutritional management of HIV and end-stage renal disease, a topic that was requested by members; hepatitis B; and HIV health disparities. Sandra Haim, R.N., provides a unique account of her work in international nutrition in Niger, West Africa.

Since the flu season is well underway, we would like to provide you with a link to a patient fact sheet about the new H1N1 virus (swine flu virus) for those living with HIV/AIDS: <http://nyhealth.gov/publications/7230.pdf>.

Additional information from the Centers for Disease Control can be found at: <http://www.flu.gov/individualfamily/healthconditions/aids/adults.html>

This update provides additional information about vaccination and treatment of HIV-infected adults.

Persons living with HIV/AIDS can have complications from both the seasonal flu and the H1N1 flu. You should call your State Health Department for any questions you may have.

We value the expertise and perspective that each nutrition professional brings to the DPG. Please consider contributing your knowledge and experience to Positive Communication by writing an article, column, book review, or by providing information via another format. Contact either one of us (junepierrelouis@yahoo.com or alison.mittelsteadt@case.edu) if you are interested.

We look forward to hearing from you,

Alison Mittelsteadt, M.S., R.D., L.D.  
June Pierre-Louis, Ph.D., M.P.H., C.D.N.

Erratum:

In the Fall 2009 issue of Positive Communication, the article on *Cryptosporidium* infection incorrectly stated that there is currently no treatment for the infection. Please note that there is now a drug called nitazoxanide (Alinia) that is approved for *Cryptosporidium* infection (and *Giardia* infection). Thank you, Kendra Kress, PharmD, for bringing this to our attention.

## Letter from the Chair

Hello IDN DPG Members!

I'm sitting on the plane, heading back home from ADA's Food & Nutrition Conference & Expo, FNCE. There was some pre-FNCE weather hysteria around snow in the forecast, but the weather in Denver was beautiful and inviting to DPG members after all. At times, it even reached the mid-80's.

The Infectious Diseases Nutrition Dietetic Practice Group had a great showing at FNCE 2009. We made our presence known. From the open discussion session to the basket we donated for the American Dietetic Association Foundation Silent Auction to the member reception, our members proudly wore their teal and silver IDN DPG ribbons throughout the convention. The open discussion session was attended by more than seventy people. Discussion topics ranged from compliance to vitamin D levels to complementary medicine. It gave those interested in Infectious Diseases Nutrition an opportunity to meet, to bounce ideas off one another and to share insights. Moderators Ellyn Silverman, MS, RD, CDN, former HIV/AIDS DPG Chair, Karen Bellesky, RD, LDN, former HIV/AIDS DPG Chair and 2007 HIV/AIDS DPG Distinguished Service Award Winner, Alan Lee, RD, CDE, CDN, CFT, IDN DPG Chair-Elect, and I were happy to facilitate the discussion and support membership in the DPG. We also presented awards to two deserving members. Jenny Torino, MS, RD, our former editor-in-chief of Positive Communication, was given the Emerging Dietitian Award, and Deane Edelman, MBA, DTR, our Public Policy Chair, was given the Lifetime Achievement Award. Congratulations and thank you to both of them for the time and effort they dedicated to the DPG! We wish they could have been there to accept their awards in person.

We had a great time at the Member Reception at Cru Wine Bar. We mingled and schmoozed with great wine and delicious appetizers. We missed having you all there!

Prior to the reception the IDN DPG Executive Committee members met to plan for the coming year. We have great plans to revamp the web site. This includes expanding topics to include infectious diseases, adding continuing education opportunities, posting patient education handouts and giving the site a new face. Please do not hesitate to contact me if you are interested in sharing your thoughts, have suggestions to make, or would like to be a part of the revamp.

IDN is always looking for members to get involved – join a committee, contribute your thoughts and make the IDN DPG your DPG!

I look forward to hearing from you. The flight is about to take off.

Jennifer Eliasi, M.S., R.D., C.D.N.  
Chair, Infectious Diseases Nutrition DPG

# Hepatitis B: What Every Nutrition Professional Needs To Know

By Alan Lee, R.D., C.D.E., C.D.N., C.F.T.

Recent advances and availability of anti-viral therapy for the treatment of Hepatitis B virus (HBV) have sparked excitement among healthcare professionals similar to that felt by providers who were caring for human immunodeficiency virus (HIV) infected individuals at the time of the advent of highly active anti-retroviral therapy (HAART).

## Anti-Viral Therapies For Chronic Hepatitis B

While there is currently no cure for HBV, HBV is being reduced in the United States population by mandated vaccination of all newborns born to HBV infected mothers. This prevents mother to child transmission. For those infected, anti-viral therapies can lead to a long-term reduction of virus level in the blood and have shown significant benefit in terms of increased survival. There are two major categories of FDA approved anti-viral therapies for the treatment of chronic HBV:

1. immunomodulators- such as the interferons: interferon alfa-2b or pegylated interferon alfa-2a; and
2. nucleoside/nucleotide analogs- such as tenofovir, entecavir, telbivudine, adefovir, and lamivudine.

All the current anti-viral therapies for HBV can be taken with or without food for proper pharmacokinetics with the exception of entecavir, which should be taken on an empty stomach at least two hours before or two hours after a meal (1).

For more information on HBV, see the 2009 Practice Guidelines from the American Association for the Study Of Liver Diseases, which is available at <http://www.aasld.org/practiceguidelines/Pages/NewUpdatedGuidelines.aspx>

## Overview Of Hepatitis B Virus

Hepatitis B virus is the most common cause of liver disease in the world. Over 1.25 million people in the United States have HBV and over 350 million people worldwide are infected (2).

Hepatitis B is endemic in Africa, Asia, and the Middle East. HBV is a DNA virus that is easily transmitted, far more easily than, for example, HIV. There are two kinds of Hepatitis B infection. The initial infection is the acute form of hepatitis and over 90% of people diagnosed with acute hepatitis B clear it, recover fully, and develop antibodies that provide lifelong immunity. The second kind of HBV infection is the chronic state. Chronic HBV infection is diagnosed when an individual tests positive for hepatitis B virus more than six months after initial infection. Chronic HBV infection can lead to liver damage, liver failure, cirrhosis, and hepatocellular carcinoma (HCC). In the United States, approximately eight percent of people with HIV are chronically infected with HBV.

## Medical Nutrition Therapy (MNT)

The extent to which malnutrition and micronutrient deficiencies contribute to the progression of liver disease has not been clearly established. The natural history of HBV includes chronic liver inflammation and the presence of oxidative stress that can cause progressive liver damage (3). A diet of 1.0-1.5 grams of protein/kg per day and 30-35 Kcal/kg body weight is recommended for healthy individuals with chronic HBV. Protein and sodium restriction are not necessary. Unnecessary protein restriction may cause iatrogenic malnutrition. Nutrition professionals should discourage healthcare providers from advising such a restriction (4).

Less is known about nutrition in noncirrhotic chronic HBV. Protein-calorie malnutrition is not typical in people with chronic HBV without cirrhosis. People with chronic HBV, however, may experience nausea and anorexia that limit their food intake. Most evidence-based information comes from end-stage patients with cirrhosis. Cirrhosis is linked with insulin resistance, iron and copper overload, as well as deficiencies in selenium and zinc (5, 6, 7, 8, 9). For more information on MNT with cirrhosis, refer to the second edition of the

ASPEN Nutritional Support Practice Manual 2005 Guidelines For Nutritional Therapy In Liver Disease.

## Thiamin Deficiency

Thiamin deficiency as well as folate deficiency are well-documented in the literature in people with alcoholic liver disease. A study in Taiwan found that there was also a dose dependent relationship between alcohol and cigarette usage in people with chronic HBV and the development of liver cancer (10). Thiamin is postulated to have direct anti-viral properties. Thiamin may also slow down or reverse liver damage in chronic HBV by reducing iron load. There is anecdotal evidence that suggests a relationship between thiamin deficiency and chronic HBV. Three case studies from New Hampshire & Vermont used 100 mg per day of thiamin treatment and found that administration of thiamin was associated with a reduction in transaminase levels and HBV viral load. Other water-soluble vitamin deficiencies of chronic liver disease include niacin, riboflavin, vitamin B6 and vitamin B12 (11). One multivitamin-multimineral supplement a day is a reasonable recommendation for people living with chronic HBV.

Large-scale prospective intervention trials in Japan and Taiwan have investigated the role of fruit, vegetable, and antioxidant consumption in the incidence of liver cancer. Green-yellow and green leafy vegetable consumption have been found to be inversely associated with hepatocellular carcinoma (HCC) (12). The Taiwan study showed a 4.7-fold increased risk for liver cancer for those who ate less than six vegetables per week compared to those who ate more than six vegetables per week adjusted for other HCC risk factors (13).

## Traditional Chinese Medicine (TCM)

Many people living with Hepatitis B utilize alternative therapies in the hope of managing their disease with less toxic and more effective medicine. TCM herbs have been widely used to treat chronic HBV. TCM drug treatment prescriptions are a complex combination

of several Chinese herbs. Chinese diagnostic algorithms follow a radically different rationale than used by many other allopathic drug treatments. Controlled trials have been done to investigate the efficacy of TCM herbs. The Cochrane Database Of Systematic Reviews did an exhaustive review of the literature and found that some Chinese medicinal herbs may indeed treat chronic HBV to some extent, specifically, Fuzheng Jiedu Tang (a compound of herbs), Polyporus umbellatus polysaccharide, Phyllanthus amarus, and the Jianpi Wenshen recipe. However, the overall scientific evidence is too weak to recommend any one herb (14, 15).

### Milk Thistle

Milk thistle (silymarin) is a widely used herb that has been touted as a remedy since the time of ancient Greece over 2,000 years ago. Silymarin treatment has resulted in statistically significant decreases in aminotranferases with chronic viral hepatitis (16). There is little evidence that silymarin affects viral load or histology in hepatitis B. Currently, there is insufficient evidence to support or refute recommending milk thistle to people living with hepatitis B (17). Nevertheless, given that it is generally regarded as safe and because of the large number of patients who take milk thistle, nutrition professionals should refrain from immediately discouraging its use. For chronic hepatitis B, a typical dose of 240 mg of silymarin taken twice a day has been used (17).

### Conclusion

Many people with chronic HBV have a poor understanding of their disease and disease management. This may lead to poor treatment adherence as well as inappropriate health-seeking behaviors for alternative therapies. There is a widespread misperception that treatments for chronic HBV are ineffective due to the lack of awareness regarding the advent of the new medications that have revolutionized the way chronic HBV can be managed. Nutrition professionals should advocate lifestyle changes, such as increased physical activity, a nutritious diet, smoking cessation, as well as avoidance or abstinence from alcohol.

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*AlanLeeRD@yahoo.com; 212-229-2298  
Special Services Center, Women's Health Center, Diagnostic & Treatment Center at North General Hospital, New York (East Harlem)  
Maitri/Greyston Adult Day Healthcare Program, Yonkers, NY  
Consultant, Asian & Pacific Islander Coalition on HIV/AIDS, New York and TOUCH, Rockland County, NY  
Chair-Elect for the Infectious Diseases Nutrition Dietetic Practice Group*

### **(Disparities, from page 1)**

variation within geographic regions, across regions, and across national and political boundaries, and each of these variations is further influenced by race, gender, socioeconomic class, sexual orientation, and other factors. Where you live, and who you are, is partially predictive of which HIV/AIDS treatments, if any, you will receive.

Disparities in HIV/AIDS primary care, whether the disparity is expressed as a difference in access to treatments or a difference in access to physician and lab services, is widely acknowledged, and nearly universally selected as a target for corrective action. A full application of the Rawlsian principle would take us much further, proposing, in essence, that if there is any other factor that is predictive of treatment or physician access for a person with HIV—something as simple as, for example, being able to physically get to a site where services are provided—then those disparities are significant as an absolute disparity in ARVs. Effective antiretroviral medications are only a benefit if one can get them.

This brings us to the question why such disparities persist despite meaningful, but clearly inadequate, attempts to address them. The evidence of continuing disparity is overwhelming. If we only cite one variable of analysis, say, race in the United States and one point in time, the differences are stark. In 2004, for example, racial and ethnic minorities accounted for almost 70% of newly diagnosed cases of HIV and AIDS; 89% of babies born with HIV/AIDS belonged to minority groups; African Americans accounted for 50% of all HIV/AIDS cases diagnosed; African Americans were more than nine times more likely to die of AIDS than non-Hispanic Whites; AIDS was the leading cause of death in African American women aged 25-34 and the third leading cause of death in African American men in the same age group; African American males had more than 8 times the AIDS rate as non-Hispanic White males; Hispanic males were also almost three times more likely to die of AIDS than their non-Hispanic White counterparts; and so forth (2). Other lists of disparities can be constructed based on gender, socioeconomic class, and other aforementioned factors.

If we propose to close the gaps, what must we do? First, health disparities must be firmly analyzed in the context of overall justice and equality. “Recent empirical literature about the social determinants of health suggest that the failure to meet Rawlsian criteria for a just society is closely related to health inequality. By establishing equal liberties, robustly equal opportunity, a fair distribution of resources, and support for our self-respect—the basics of Rawlsian justice—we would go a long way toward eliminating the most important injustices in health outcomes” (3). Without underlying systems and guarantees of justice, equality, and freedom, health inequality will persist. This applies as well to the long-term public health needs of the populations of developing countries:

“[I]n all too many cases, aid is tied to short-term numerical targets such as increasing the number of people receiving specific drugs, decreasing the number of pregnant women diagnosed with HIV, or increasing the quantity of bed nets handed out to children to block disease-carrying mosquitoes. Few donors seem to understand that it will take at least a full generation (if not two or three) to substantially improve public health, and that efforts should focus less on particular diseases than on broad measures that affect populations’ general well-being.” (4)

Equal pill counts, adequate ratios of HIV specialists to local HIV infected persons, regular access to broadly equal lab diagnostics are, in a Rawlsian analysis, necessary, but hardly sufficient. What are all the things that need to be addressed if we are to correct the many levels of disparity accompanying HIV/AIDS? These fall into three broad categories of social values: the right to commodities, the right to personal freedoms, and the right to protections.

Certain commodities comprise the basic list of resources associated with HIV/AIDS. These commodities certainly include a full list of effective ARVs, as well as medications and treatments used to prevent or treat opportunistic infections associated with HIV infection. There is an extensive and growing list of such medications, and universal access has been constrained by cost. It is important to question whether that cost

is prohibitive. It should be within the capacity of national and international financing institutions, working collaboratively with pharmaceutical companies, to absorb these costs without undue burden on the global community. What seems to be lacking is political will.

The list of HIV/AIDS-related commodities to which individuals have rights also includes an expanding list of prevention tools and technologies, specifically, latex condoms and barriers, and more generally, family planning methods. This list is likely to expand as effective microbicides and perhaps vaccines are developed and deployed. The right to effective prevention tools has been subject to wide variation in application. Local and changing ideology has created an uneven global and national patchwork of rights applications, so that in some communities or regions of the world, condoms and family planning services are readily accessible, while in others, they are actively discouraged or even outlawed. Variations are notable in the availability of and access to clean syringes and methadone maintenance therapy for opiate users as well.

While these constitute core HIV/AIDS rights-related commodities, assurance of an individual’s right to those commodities must also be addressed to ensure adequate utilization. As has been often noted, being able to secure a needed ARV that requires refrigeration does not mean much unless the individual has a refrigerator. It is here that the emerging and sometimes contentious debate about what constitutes HIV/AIDS rights-related commodities becomes more contentious. While there is broad consensus that all people should enjoy access to adequate medical treatment, and some consensus that prevention tools and technologies need to be available, there is less agreement about whether all persons have shared rights to the commodities that can make utilization of core commodities meaningful, such as decent housing, reliable transportation, and nutritionally adequate food. Such disagreement is seen in American domestic policy. While nearly everyone agrees on the need to subsidize medications so that universal access can be achieved, there is far less concordance about whether there is a public responsibility to subsidize HIV/AIDS-related housing, food, and transporta-

tion services for the HIV population. We must be careful not to conflate the range of imperatives, in the fight against AIDS, into the single strategic goal of providing drugs. “Treatment is not really the starting point of the problem, it is the end state. To always think about treatment is to remain distanced from the social and economic origins of illness and well-being” (5).

The second set of resources related to HIV/AIDS human rights includes an extensive list of personal freedoms. This includes freedom of personal expression, the freedom to form and maintain intimate relationships, freedom of association and community affiliation, freedom to make informed decisions about treatment and prevention options, freedom to refuse treatment, freedom of speech and protest, and the freedom to engage in consensual sexual behaviors. These personal freedoms are, or should be, constrained by collective freedoms only if those collective freedoms are founded on rational, scientifically-derived principles. One does not have the freedom to work in a setting where there are no people with HIV/AIDS, for example, because there is no scientific basis for fears of infection through casual contact, but a person with HIV/AIDS might be legitimately denied, through legal prohibitions, from having unprotected sexual intercourse with persons who know their status, because there is a legitimate basis for concern about possible transmission, and a legitimate claim by the second party about personal risk.

Foremost among the personal freedoms associated with HIV/AIDS have been freedom of personal expression, especially the freedom to express oneself in ways that do not conform with dominant or traditional normative expectations for male and female gender, and the freedom to engage in intimate, sexual relationships of the individual’s choosing. Indeed, in many parts of the world, the exercise of such freedoms places the individual at real and immediate risk of not merely violence perpetrated by other individuals, but state-sanctioned violence and murder as well. The curtailment of such freedoms has and will continue to have a profound effect on our ability to mount an effective response to the global HIV/AIDS epidemic.

The HIV/AIDS-related resources

to which individuals have a valid claim include a range of state and community protections. This differs from personal freedoms in that one may enjoy the freedom of personal expression as a result of local community norms, but still be subject to violations of that freedom because of the lack of structural mechanisms that prohibit and sanction violations. Of particular significance in HIV/AIDS is the presence or absence of local and national structural mechanisms that will protect the rights of women and girls, and of lesbian, gay, bisexual and transgender persons. In terms of gender, laws about property rights, spousal and relationship violence and rape, employment, education, mobility, medical and family planning decision-making, and divorce will all have a profound effect on opportunities to reduce HIV incidence among women and girls, and opportunities to treat women and girls who are already infected. We will be severely hampered in our ability to fight the epidemic unless women and girls are guaranteed greater freedom and autonomy in social relations, and in intimate relationships (6).

None of this brings us any closer to a resolution of multiple disparities in relation to HIV/AIDS that translate into questions of health or illness, life or death, for individuals and populations. It does, however, begin to reframe, and considerably sharpen, the questions to be asked, and the subsequent analysis. If a Rawlsian perspective has any validity in this case, then we are left to conclude that viral loads and CD4 counts, clinic visits and lab tests, are but the surfaces of some very deep waters. To paraphrase an old spiritual song, we must trouble the waters if change is to occur.

Efforts to reduce care disparities that do not fully confront underlying determinants of those disparities—the foremost of which are poverty, racism, gender inequality, and heterosexism—cannot hope to succeed. Worse, they may subtly or overtly contribute to ideological worldviews that blame the victim, be it a population or the individual for the disparities.

“Each year, we ask the same question: Why is AIDS hitting black Americans hardest? While much of the existing literature focuses on quality of care, health care access or individual risk behaviors, we believe that the HIV/

AIDS epidemic in African American communities results from a complex set of social, individual, and environmental factors” (7).

Here, “complex set of social, individual, and environmental factors” can be taken as code for oppression, discrimination, the immoral and widening global and national gap between rich and poor, and the gaps in healthcare among the American middle class. The whole array of resources—commodities, personal freedoms, protections—come in to play.

What does this mean for the individual professional? First and foremost, a failure to fully recognize and respect the “complex set of social, individual, and environmental factors” influencing an individual patient’s health outcomes, in care or research settings, misplaces agency and individual responsibility. The health deficits of the poor will not be corrected by mere personal fortitude and self-reliance. Systems, processes, and history itself all play a role, and must be identified and named as such.

Second, the problem is hardly resolved when we help an individual get pills. In partnership with the patient, we must ask how we can work together, strengthening the patient’s personal development and capacity for advocacy vis-à-vis systems and social structures to develop, at each step, greater freedom and entitlement.

We can and should wish, if access to HIV/AIDS resources is universally conceded, and if the commodities, personal freedoms, and protections can be reasonably guaranteed, that new, rights-based relationships between providers and consumers will begin to alter the fundamental inequalities that now exist. The current gaps confounding HIV/AIDS “success” between rich and impoverished nations, between Western medical and political discourse and local knowledge, between the status of providers and that of consumers of health resources, and so forth, are profound.

Continuing to work “around” them, in the short-term, in order to carry out the short-term objectives of simple care and treatment, will only continue to hamper our efforts to carry out research and care that is ethical in every respect.

(See **Disparities**, page 8)

# Interview with Sandra Haim, M.P.H., A.C.R.N.:Niger

By Brenda M. Murdock R.D. and Sandra Haim, M.P.H., A.C.R.N.

## Background

After serving in the Peace Corps, Ms. Haim became a nurse and started working in the field of HIV/AIDS. She has worked as an HIV/AIDS visiting nurse for a maternal child HIV team in the Bronx, NY. She was also the Director of Nursing for an HIV pediatric sub-acute facility in Manhattan, and has done discharge planning and quality assurance for several homecare agencies serving HIV/AIDS populations. In Africa, Ms. Haim worked in Niger with the Peace Corps from 1988 to 1991. She also worked in Kenya in 1993 as a health team leader in a refugee camp set up primarily for the influx of southern Sudanese who were escaping their civil war. More recently, from 2003-2006 she spent three years living in Nairobi, Kenya where she worked as a consultant to USAID, Tearfund, and the American Refugee Committee to monitor and evaluate their HIV prevention programs. She talked to me about her experiences in Niger.

## BM: What took you to Africa?

SH: In 1986 at age twenty eight, I was barely getting by as a fashion photographer in NYC and feeling disillusioned by the rat race, so I decided to join the Peace Corps. I went to present-day Democratic Republic of Congo, what was then called Zaire in 1988, but came down with malaria, which really scared me, and so I chose to leave after two months. As soon as I got back to the U.S. I realized I had made a big mistake and I proceeded to re-apply to Peace Corps. Less than a year later I was on my way back to Africa, this time to Niger, a landlocked country in West Africa in the Sahel region. It is a very arid country and ranked by the United Nations as one of the poorest countries in the world. Niger has periodic droughts when the rainfall is poor so there is a shortage of the staple grains of millet and sorghum, and international food assistance is needed to distribute food to the affected populations.

## BM: What were the main nutritional problems that you observed?

SH: In Niger, people subsist on mainly millet or sorghum and there is little dietary diversity, particularly for breastfed children who are given thin porridges made of millet flour with a bit of sugar from an early age. Due to poverty, mothers often find it difficult to add anything more than sugar to these porridges. But when available, cow or goat's milk, a bit of oil, or peanut flour may be added. This lack of quantity/energy and quality/micronutrients causes not only energy malnutrition but other illnesses caused by lack of specific vitamins, for example, vitamin A deficiency, and kwashiorkor. Children's growth is tracked by growth monitoring programs in local clinics. Children who are two standard deviations below the norm for weight-for-age are considered malnourished and are provided counseling and food supplementation where available.

## BM: What did you see as the obstacles to providing adequate nutrition?

SH: What I saw in 1988 was, first, a lack of resources. Soil was poor for a variety of reasons, such as: lack of fertilizers (farmers were unable to afford them), erosion, resulting in poor soil (trees were cut down for fuel leaving the soil open to erosion from heavy rains), and lack of rainfall, due to periodic droughts. People could not keep much livestock close by as there was little unfarmed arable land left for grazing. Periodic droughts also affect the water table and hinder small farm irrigation from wells or seasonal rivers. Poverty often was a barrier to being able to access clean drinking water or to purchase food, medications, or treatments for diarrheal diseases.

Chronic and acute diarrhea often resulted in malnutrition. Diarrhea due to infection is widespread throughout the developing world and a leading cause of preventable death, resulting in four percent of all deaths worldwide. Each

year, diarrheal diseases kill 2.2 million people, the majority of whom are children in developing countries. The dehydration caused by diarrhea is particularly dangerous and deadly to children under five, and diarrhea is the second leading cause of death for this age group. Nearly one in five child deaths is due to diarrhea, a loss of about 1.5 million lives each year (1). Worldwide, approximately 1.1 billion people lack access to improved water sources and 2.4 billion have no basic sanitation. In Niger, 19.8% of all deaths in children under five years of age is caused by diarrhea as compared to 0.1% in the U.S. (2).

Another obstacle is cultural beliefs. In Niger, among the Hausa people, if a child had diarrhea, it was thought that  
(See Interview, page 11)

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## (Disparities, from page 7)

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# Co-Managing HIV Disease and End-Stage Renal Disease

By Mary Griffin, R.D.

In the era of highly active antiretroviral therapy (HAART), chronic comorbidities of HIV/AIDS, such as renal failure, have become contributors to morbidity and mortality (1). Through numerous pathophysiologies, people living with HIV/AIDS (PLWHAs) may be at increased risk for renal failure. The incidence of end-stage renal disease (ESRD) associated with HIV is estimated to be 800-900 cases per year (1). Overall, HIV-infected patients comprise 1-2% of the American hemodialysis population (2-3) and this percentage is expected to increase over time (1) as the HIV-infected and ESRD populations grow.

Co-management of HIV and ESRD poses a challenge to dietetics professionals, requiring vigilant monitoring and reconciliation of occasionally conflicting dietary recommendations. This article reviews special medical and nutritional considerations for HIV patients with renal failure.

## Assessing renal function in PLWHAs

Numerous laboratory markers are used to assess renal function. The gold standard is the glomerular filtration rate (GFR), which measures the flow rate of fluid filtered through the kidney and reflects percent of kidney function (4). Patients with a GFR < 60 ml/min should have a renal ultrasound or biopsy or be referred to a nephrologist (5).

Annual screening of renal function is recommended for HIV patients at risk of developing nephropathies, including: individuals with low CD4 count (<200), high viral load, African ancestry, age > 60 years, and/or a history of diabetes mellitus, hypertension, or hepatitis C (5). Biannual screenings are recommended for patients on HAART regimens containing tenofovir, indinavir, or ritonavir, since renal impairment is a potential side effect of these antiretroviral medications (5).

Frank renal failure is diagnosed when GFR is < 15 ml/min. Once end-stage renal failure is reached, patients must receive a kidney transplant or initiate dialysis to survive.

## Renal replacement therapies for PLWHAs

HIV was once considered a contraindication for organ transplantation, based on concerns surrounding patient mortality, graft survival, and the potential negative impact of immunosuppression (necessary to prevent organ rejection) on already immunocompromised patients. However, a growing number of healthcare facilities are now performing transplants for PLWHAs. Data from HIV-infected recipients of kidney transplants are showing survival rates similar to other patients (5, 7, 8). Graft survival also appears to be comparable (7-8), although HIV-associated nephropathies can subsequently develop in the grafted kidney (7). Concerns about immunosuppression have also not been realized due to treatment using immunosuppressant agents with antiretroviral activity, such as cyclosporine and mycophenolate mofetil (5, 7, 9-10).

Despite improved transplantation outcomes, the majority of PLWHAs with ESRD, choose to receive maintenance dialysis. Both hemodialysis and peritoneal dialysis are viable options for HIV patients. Standard infection control practices in dialysis facilities are adequate to prevent HIV transmission and patients do not have to be isolated or dialyzed on separate machines (10). Peritoneal dialysis does require additional patient precautions since HIV has been identified in peritoneal dialysis waste fluid requiring patients to handle and dispose of waste products properly (10).

## Medical Nutrition Therapy for ESRD in HIV patients

### Nutritional assessment

Numerous laboratory values are altered by renal failure. Depressed serum albumin levels are common, resulting from poor food intake, hypermetabolism and/or fluid overload. Prealbumin levels and, if available, normalized protein catabolic rate (nPCR) are more accurate indicators of body protein stores. Other altered lab values may include high serum potassium and phosphorus and low

hemoglobin levels.

Standard anthropometric markers can be used to assess nutritional status in patients with concomitant HIV and renal failure, although several indicators are altered by ESRD. The patient's estimated dry weight, i.e. their "true" weight or weight at which there is no excess body fluid, should be used to monitor weight changes and to calculate body mass index (BMI). Mid-arm muscle circumference as well as triceps skinfold measurements may be skewed by fluid retention and should be measured after a dialysis treatment in the arm that does not have the fistula or graft used for dialysis access (11).

Bioelectrical impedance analysis (BIA) is an important method for assessment of body composition of PLWHAs; however, BIA tests can be distorted by renal failure and have not been validated by the National Kidney Foundation (12). Fluid retention increases both total body water and extracellular water, from which fat-free mass and lean body mass results are derived, respectively. Thus, BIA may not be as accurate in detecting lean body mass depletion in patients with renal failure (11, 13-14). The optimal time to perform BIA with respect to dialysis treatment is also disputed. Several sources recommend conducting BIA 30-90 minutes post dialysis (11, 15). BIA should be performed on limbs without fistulas or grafts (15).

## Side effects and complications of ESRD

The kidneys' inability to excrete metabolic wastes causes fatigue, nausea, vomiting, taste changes, inflammation of GI mucosa, anorexia, and decreased vitamin absorption. Metabolic acidosis is also common in renal failure and leads to bone demineralization and depressed albumin synthesis. Cardiovascular disease is a serious complication of ESRD and is the leading cause of morbidity and mortality among dialysis patients (16). Anemia and protein-energy malnutrition are common to both ESRD

(See **HIV and ESRD**, page 10)

## (HIV and ESRD, from page 9)

and HIV and have been demonstrated to be more severe when both conditions are present, with lower hematocrit and albumin levels than with HIV infection or renal failure alone.

### Dietary guidelines for HIV and ESRD

Specific nutrient requirements for patients with concurrent HIV and renal failure have yet to be determined. At present, the National Kidney Foundation's Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines for renal failure are recommended to determine nutrient recommendations for PLWHAs (17). KDOQI's recommended daily calorie intake is 35 kcal/kg for persons less than 60 years old and 30-35 kcal/day for people over 60. Protein recommendations are 1.2 g/kg/day for hemodialysis patients and 1.2-1.3 g/kg/day for peritoneal dialysis patients. Because these are similar to or slightly lower than recommendations for non-wasting PLWHAs of approximately 35 kcal/kg/day (18) and 0.8 g protein/kg/day (19), frequent monitoring of patients with HIV and renal failure is recommended to ensure patients are maintaining weight and showing no signs of protein-energy malnutrition.

Patients with renal failure must also limit fluid, potassium, and phosphorus intake, since dialysis does not adequately remove excess amounts. These dietary restrictions are not only difficult for patients to adhere to but also conflict with diet recommendations for PLWHAs, since many potassium- and phosphorus-rich foods are high in vitamins, minerals, and phytochemicals believed to optimize immune function. Frequent communication between HIV and renal dietetic professionals is necessary so that patients' diets are tailored to their individual needs and liberalized whenever possible.

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*Mary Griffin is a dietetics consultant for the HIV Primary Care Clinic at Arnot Ogden Medical Center, Elmira, NY. You may contact her at [threemgriffin@yahoo.com](mailto:threemgriffin@yahoo.com).*

### (Interview, from page 8)

water should be withheld in order to stop the diarrhea. Diarrhea was sometimes diagnosed by the local midwife or medicine man through the act of making small holes in the ground. Each hole would be given a possible reason for the diarrhea—bad water, witchcraft, teething, lack of rain, etc. The hole which held the water would be identified as the cause for the diarrhea. Eggs were withheld from children because it was thought the children would become thieves when they grew up if they consumed eggs. Another practice was abrupt weaning from breast milk. In Niger where family planning methods were not used, breast feeding provides some birth control protection for the first 6 months to 2 years, but women often became pregnant while still breastfeeding. When a mother became pregnant, the breast milk was thought to belong to the unborn fetus so the child who is currently breast feeding (usually anywhere from six months to two years of age) is taken to the grandmother's house to be weaned. While this practice ensures that the mother has time to regain her nutritional stores during pregnancy, these young children would be immediately introduced to either thin millet porridge and sugar and/or adult foods and well water. They would invariably develop diarrhea. Not only would they become ill but they were often sad and confused about being separated from their mothers.

**BM: What is being done to bring food and nutritional support to these individuals?**

**SH:** As a Peace Corps volunteer, we were trained to provide education on numerous issues such as good hygiene (hand washing, keeping flies away from food, latrine building, boiling/filtering water), gradual introduction of fortified weaning porridges, and nutrition education. Many people did not know that germs cause illness. We would talk about the four food groups and the need for foods from all four groups as the four legs of a table and how they were all needed to keep the table standing. This was a new concept as many people thought all they needed was to fill their stomachs with millet. In terms of recuperation for the severely malnour-

ished, there have been advances since I was there. In the late 80's there were therapeutic feeding centers set up where children were admitted and fed fortified milk diets. In the 1980s as Peace Corps volunteers, we would also go from home to home and teach mothers how to make these fortified milk feeds. We would distribute powdered milk and teach them how to mix it with clean water and add oil and sugar. This is no longer recommended. Today Doctors Without Borders (Médecins Sans Frontières—MSF) has introduced a Ready-to-Use Food (RTUF) called Plumpy Nut, which is a micronutrient-fortified peanut butter paste that does not require cooking or added water. This reduces the risk of water and foodborne illnesses and the dilution of nutrients, and has been shown to be highly effective in the treatment of acute malnutrition in children. In addition, often this can be administered at home by the mothers who are often too busy and overwhelmed to stay with a child in a feeding center.

**BM: When working with HIV positive mothers, did they struggle with deciding to breastfeed since it is a known transmitter of HIV?**

**SH:** Studies have shown that breast milk can transmit HIV to an otherwise healthy infant. While in the US and other resource-rich countries, HIV infected mothers are advised to formula feed only, this is not the case in resource-poor communities in Africa. Whether a mother knows her HIV status or not, she is advised to exclusively breast feed for the first 6 months. The practice of exclusive breastfeeding for the first six months is promoted for several reasons. Most women can not afford to solely formula feed and would end up breast feeding as well. Women who are seen exclusively formula feeding may be stigmatized and labeled as HIV infected. In Africa, formula feeding entails clean water, bottles and nipples, all which are too expensive for many families. While breastfeeding up to two years of age is common, true exclusive breastfeeding (no water, no herbal teas) up to six months of age is not. Many women choose to do early mixed feeding - supplementing breast milk after one month of age with milk, water, porridges and other foods. The early introduction of foods to in-

fants under 6 months old can irritate and cause mucosal damage to the esophagus or stomach lining. Diarrheal diseases are also likely to irritate the lower GI tract. It is these structural changes that are thought to facilitate HIV transmission through breast milk.

**BM: Is there anything individuals/dietitians can do here in the U.S. to help?**

**SH:** Donating to organizations with good reputations is one way to help. I particularly like the work that MSF does in developing countries. Nutritionists should be mindful of their African clients' customs and beliefs, and how receptive they might be to advice given by a nutritionist who is unaware of their cultural practices in their respective countries. An example would be if a nutritionist advised a Hausa parent to feed his or her child eggs - it might not happen.

**BM: Will you be going back to Africa?**

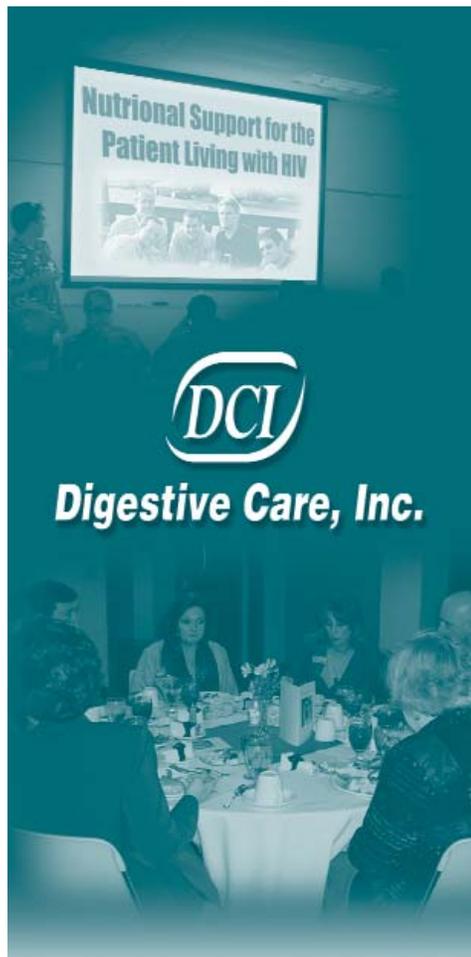
**SH:** I sincerely hope so. My husband is from Malawi and we try to take our two kids there every few years and one day I hope to retire there!

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*Brenda Murdock, R.D. is an Infectious Disease Practice Nutritionist at the University of Medicine and Dentistry of New Jersey (UMDNJ) in Newark, NJ. Contact information: phone: 973.972.8602; email: murdocbm@umdnj.edu*

*Sandra Haim M.P.H., A.C.R.N. (AIDS Certified Registered Nurse) Nurse Case Manager at the Infectious Disease Practice at the University of Medicine and Dentistry of New Jersey (UMDNJ) in Newark, NJ. Contact information: phone: 973.972.4698; email: haimse@umdnj.edu*



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