

First I would like to express my gratitude to the Iowa soybean farmers for sponsoring this lovely breakfast and the World Initiative for Soy in Human Health (WISHH) for affording this opportunity to briefly share thoughts from a medical community point-of-view on the issue of HIV/AIDS and food and nutrition. WISHH is a soybean farmer-funded program with the mission to explore the role of soyfoods in human health and to efficiently meet the anticipated shortfalls in protein for the world's populations over the next decades. As such, their mission coincides quite well with the mission of HIV/AIDS care providers. WISHH has a table outside which will be manned by the Executive Director, Jim Hershey. Jim will be happy to talk with any of you more about WISHH activities and provide you with a "sample pack" of soyfood products that are being used.

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In many situations we say, "Practice precedes science." That is, we decide to take action without a clear idea of what works best and what the impact will be. This is particularly true in HIV infection, which can be likened to a health earthquake or monsoon. With the urgent need for action and the time and effort it takes to establish scientific evidence, more immediate but careful action seems very appropriate. Closely following these actions, we need to implement the means to monitor and establish a research base to yield the evidence needed to invest in the most effective and feasible plans. In other words, practice and actions without the development of the evidence to support it is not likely to last forever and could have us headed down exactly the wrong road.

In 1987 I worked at the center that was said to "set the standard" for care in HIV infection, San Francisco General Hospital. At that time I was told many times in many ways that the wasting that I saw was a disease issue, a part of the natural history of AIDS. After spending many pot luck and Domino's Pizza evenings on the AIDS ward, where the sickest of the group were admitted, it just didn't ring true. I changed hospitals and was given free reign to prove my point. We fed people with AIDS. We got them off of expensive respirators. We extended their lives for an average of 1 ½ to 2 years beyond what was considered "long-term survival" which was up to 18 months after being diagnosed with AIDS. It wasn't until 1989 that the evidence was formally reported in peer-reviewed scientific publications that the timing of death in HIV infection is more related to nutritional status, particularly the body's protein stores (you call them muscles and organs) than to immune cell counts, the amount of virus in the blood, or opportunistic infections. So it is nutritional status of the person that determines when they will die. That was a profound moment for me.

In 1996 guidelines were set and there was a widespread introduction of anti-HIV drugs in the United States. While I was certainly ready to pack my bags and sell Mrs. Fields' cookies instead, we found something else was happening. While many were ignoring the problem, evidence was presented to show that over the last 7+ years as many as 40% of people with HIV in the United States still experienced a wasting process. And this problem was related mostly to a reduction in food intake. Those who were surviving faced additional nutrition-related problems of accelerated diabetes, cardiovascular disease, and osteoporosis. So, I didn't pack up shop.

At this point, I would like to briefly review some of the evidence that exists.

1. We need to remember to treat the body as well as the bug. Survival is still most closely related to the maintenance weight and protein stores. We know that if you lose muscle and organ tissues because you don't get enough calories and protein, your body will cease to normally function. Your body won't process medications as effectively and efficiently as it should. And if you lose too much, you become debilitated and die.
2. We know that to hang onto muscle and organ tissues with a chronic infection, like HIV that challenges your body every single day, you must have enough calories and protein. Recent studies suggest that high quality protein is related to the ability to maintain these tissues and that other forms of energy are not as efficient in that respect.
3. We know that preventing losses is better than regaining ground after losses exist. In chronic infection the body may not recover fully to normal levels because of a number of body changes that happen when you lose this type of weight.
4. We know that the choices for nutrient-dense calories and quality protein are important to maintain the body. In the United States and Canada, we have been recommending high protein and high quality protein diets from the beginning. This is not a difficult task for our patients here in the US and Canada because we tend to consume around twice the recommended amount on a daily basis. We continue to make these recommendations and have added the preference for soy as a protein source because of its many other potential health benefits to help in the prevention and treatment of diabetes, heart disease, and osteoporosis that now plagues our patients. In resource-limited settings the use of soy as a quality protein source allows us to implement the high-protein recommendations in an economically feasible way.

There are a few things that we need to do. We need to think about the "big picture" in HIV disease. We should not treat this just as an emergency with no tomorrow to face. With any luck, the people who receive such care will be "back in our face" to demand an explanation for such short-term thinking when we have evidence to keep us from making that kind of mistake. While it is true that we badly need vaccines, at this time we don't see one or more close enough on the horizon to stem the tide. We do know that keeping a nutritionally sound body can extend survival, a very important factor in settings with limited resources. We also know that politics, food, and disease are closely tied. Relieving nutrition insecurity is likely to reduce the motivations that lead to spread of HIV infection.

As speakers yesterday emphasized, more than talk is needed. In line with this, at WISHH we have been working collaboratively with several groups toward problem solving, program development and implementation, and supporting the process of gathering evidence to round out the research issues and help the all inclusive "us" to find our way. WISHH supports efforts for farmers in developing countries to improve their productivity and hopes to complement their efforts by addressing the common shortfalls in quality

protein. We are looking at creative ways to enhance the food supply in resource-limited settings.

The example I would like to share with you is based in Uganda. USAID has funded an effort to augment feeding for 12,000 people living with HIV infection and their families totaling 60,000 people for a period of 5 years. WISHH worked with ACDI/VOCA and its partners to develop and implement a study to determine the impact of this program on health, quality of life, living situations, and survival of a subset of the beneficiaries. This project is a rigorous look at these criteria that has been reviewed and approved by the Institute of Public Health at Makerere University and the Uganda National Centre for Science and Technology.

This one-year project is geared to inform us about the impact of a feeding program and to determine the strongest indicators of such impact so that the process can be significantly streamlined in future work. Research personnel are out in the field as we speak enrolling participants and taking measures to establish a baseline on nutritional status and other factors that affect health and survival. This baseline, a cross-sectional view which is nearly completed, will allow us to understand the specific circumstances of living experienced by the beneficiaries and their families.

Serial measures every three months will take a look at how these items change. Specific improvements we hope to see include improved weight and strength, improved growth and catch-up growth in children, improved quality of life, improved health, and improved living circumstances. These serial measures of the impact of food intervention will allow us to determine which aspects of health a food program can change and improve. We eagerly await the evaluation of the data gathered and the contribution to evidence about the paths we are choosing to address the closely tied issues of HIV/AIDS and nutrition insecurity.

There are several other examples of a variety of the types of activities that will contribute to our evidence base to improve practice as well as to help us to abandon less effective activities for more effective approaches. Working to address the issues of nutrition in HIV/AIDS to improve survival and health is just one piece of the puzzle. But it is essential to achieving those things that have been so inspirationally discussed during this conference.