COMMENTARY

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IT IS HUMBLING to be the only public health person here. I'll be talking specifically about the Alaska public, but I think many of my comments and ideas will apply to other rural regions in the lower 48 states as well.

Dr. Titus set the stage well when he talked about how much Alaska Natives rely on fish and game. I often talk to audiences about that situation too, but my talks have a bit of a different focus because my emphasis is on the nutritional importance of these foods. The nutritional value of fish and game in Alaska is so much greater than any alternative foods that Alaska Natives may have. Even though they eat a considerable amount of red meat, it is very lean in comparison to red meat from cows, and much healthier. Our fish, too, are highly nutritious with the omega-3 fatty acids that are so important to healthy hearts and to brain development in children.

These traditional foods are very important to the culture and even the identity of Alaska Native people. Only a small part of Alaska has a road system, which makes it difficult to acquire alternative commercial foods. For example, small planes deliver food at great cost to a store that may be open a few hours a week. The types of food that are there are shelf-stable and non-perishable things like spam and hot dogs that are not nearly as nutritionally sound as traditional foods.

Therefore, one of the main things we often do when we go out and talk to people in Alaska is to actually promote traditional food consumption, and promote hunting and fishing. Essentially, we advocate the maintenance of a traditional way of life. Unfortunately, what we have seen is that, over time, due to a variety of different forces, reliance on traditional foods has slowly declined. As people are switching to market foods, we are seeing an epidemic of heart disease, obesity, and diabetes in our Alaska Native communities that we didn't see previously. So to us, this is a major health concern, and that is why we promote traditional food use.

When we talk to people about this issue of lead in bullets, we need to make sure we are not talking people out of hunting. Also, we need to be very, very sensitive to the economic issues. These villages have few local jobs, except for local government or the local school system, and many people are unemployed. You saw that gasoline is very expensive—market foods are incredibly expensive and limited—and people simply do not have money. The situation is getting better, but there are

many villages without running water or sewage systems; people manually dump their wastes into ponds called sewage lagoons. Conditions can be primitive, and money is often scarce. Consequently, asking rural villagers to buy more expensive ammunition could be a big problem. It's not that they are frugal, rather that they simply do not have the money. We need to think of ways to help them acquire better ammunition. I cannot stress enough that we need to be very sensitive about the culture and the economic situation.

I'll tell you what I've learned here. I saw the abstracts of the venison studies come out a few weeks ago. That was the first time I heard about lead fragments contaminating meat. And now, from what I have learned from this conference, I am very concerned. One thing that I am going to do is add this as a potential source when I am doing lead follow-up. I made a decision that I will never hunt with anything but a copper bullet. And I think that if other Alaskans knew, many of them would make the same decision.

Alaskans have a special relationship to the environment. They would not want to contaminate it or their children. I think that if they knew what we know, they would want to change. The challenge is, how do we help them to know what we know? It is difficult because it is hard to reach into remote villages throughout Alaska. We do not have much access to them, and, when we do, we cannot simply tell them what we know as scientists. Instead, we have to work within the context of their way of learning and knowing; namely, they must have the experience themselves. It is very intensive work and our resources are limited. We will have to collaborate with partners to get it done. One thing I'm going to do is to intensify our efforts to screen people for blood lead levels in Alaska, and consider lead ammunition as a potential exposure source. There is interest within the health department to do screening of children, and so we will be testing children for lead. If you do have another conference in three to five years, I'll have results and be able to tell you all about them.

This has been a great conference, but I would like to challenge each of you. Choose one thing to do, put it in your planner, and do it. My one thing is this additional bio-monitoring, and I am also going to add consumption of game meat shot with lead to my list of things I check for.

Biography.—**Lori Verbrugge, Ph.D.**, is the Environmental Public Health Program manager for the Alaska Division of Public Health. She has been working to assess the human health implications of contaminants, including lead, in Alaska's environment since 1997. Dr. Verbrugge has coordinated the development of analytical chemistry capacity and programs for the Alaska Public Health Laboratory, and currently works in the Section of Epidemiology to provide expert toxicological support and policy advice to the Division. Dr. Verbrugge oversees various environmental health programs, including human biomonitoring, blood lead surveillance, subsistence food safety, environmental health research, and an ATSDR cooperative agreement to assess the public health implications of contaminated sites in Alaska.