

US EPA ARCHIVE DOCUMENT

CASE STUDY BACKGROUND

The new LifeLine Community-Based Exposure and Risk Assessment Software™, developed and used by US Environmental Protection Agency (EPA), has the capacity to evaluate potential exposures that might occur as Tribal groups practice their own cultural traditions or carry out their everyday life patterns. These communities often experience circumstances which are not experienced in other communities and which require special attention when being considered in an exposure or risk assessment.

As part of the overall project done for EPA's Office of Prevention, Pesticides and Toxic Substances (OPPTS), an implementation study using the LifeLine™ software was completed. Several tasks comprised this effort

➤ **Training sessions** for federal, state and university scientists who work with Tribal groups, as well as for Tribal Councils were conducted. These sessions were well received and various groups are planning strategies for how they will interact with Tribal groups on the use of the software.

➤ A case study was done to determine whether using a **Tribal Advisor/Community Assessor** would be a useful approach to empowering Tribes.

➤ The US EPA OPPTS entered into an **Interagency Agreement with the Agency for Toxic Substances and Disease Registry (ATSDR)** to support the Environmental Public Health Program of the State of Alaska and the Alaska Native Tribal Health Consortium who will use the Community-Based Exposure and Risk Assessment Software™ in conducting health assessments for Native communities in Alaska.

➤ Tribal and international organizations working on global issues related to Tribal community concerns **collaborated** in this effort.

THE COMMUNITY ASSESSOR

It was found that using a community assessor was a very successful approach when working with a Tribal group to complete a risk assessment. Without an suitable community assessor, it is anticipated that this process would not be as successful. Several important characteristics of the community assessor include

- Knowing the community and someone who is trusted by the community
- Having technical expertise to learn how to conduct the assessment or to work with someone who can
- Willingness to work with the community to choose the case study
- Working closely with the community representatives to produce a health effects assessment and present results to the community

The community assessor received ongoing assistance and training related to

- Working with the monitoring data to be used in the case study
- Assistance in running the LifeLine™ software
- Assistance in finding the appropriate health effects data for the risk assessment
- And general support was provided to the community assessor throughout the case study

SELECTING A DIETARY CASE STUDY

This project identified one of the 229 small Tribal communities in Alaska which was interested in participating in a dietary risk assessment case study. Since most of these communities are less than 1,000 people and are geographically and logistically isolated, it is virtually impossible to retain someone in the community who has the time and training to perform risk assessments.

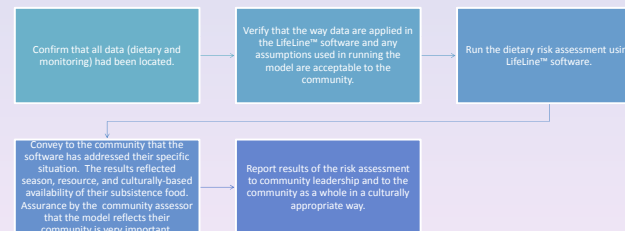
When beginning discussions with the community it is very important to understand the context of why it is important for the community to evaluate the risk from the selected food(s) because it helps to

- Establish a functional communication and relationship with the community
- Obtain the correct details for data input
- Guide the judgment of what results are important
- Interpret where to be conservative in assumptions made
- Understand which age or other important group to focus the assessment on

Remember that your assumptions concerning a community's dietary practices are likely to be incomplete or incorrect.

A specific concern regarding the amount of zinc present in Caribou was identified by the community assessor with thorough input from the community. Caribou are an important subsistence food and the community had received information regarding the presence of zinc in the caribou meat. This raised concern that there was a potential health risk posed from eating caribou.

COMMUNITY ASSESSOR'S RESPONSIBILITIES



KEY LESSONS LEARNED

The community needs to understand what a risk assessment model does and does not do so it can

- Provide the assessor the correct dietary and monitoring information
- Correct assumptions of the assessor that might otherwise go unnoticed
- Have realistic expectations regarding the answers which they will receive through this risk assessment process

When discussing risks, it is important to keep in mind the community's specific concerns and cultural norms. Remember that

- Tribal cultures tend to place heavy emphasis on health of elders because they hold the key to cultural integrity.
- The idea of risk as 1 in 100,000, etc. must be conveyed with the knowledge that it will not be thought of as an unknown hypothetical person. It could be someone in the community whom everyone knows – this is essentially an extended family relationship. Do not infer there is someone in the community they don't know.
- Range of amounts eaten and frequencies is easier to convey to Tribal communities than the notion of probabilistic modeling
- It is likely better to not show outliers. Discussion of realistic maximums is a better way to communicate the range of exposure/risk which might be expected.
- Traditional presentation of scientific data by scientists does not work, particularly with elders who are not familiar with pie charts, histograms, graphs. Anything used must be clear and well explained in the presentation. Avoid any use of jargon!

Take care when setting the time and place for a community meeting to present results. Certain seasons or times may not be good for the community given hunting/gathering calendars, cultural celebrations, or daily activity patterns which are drastically different from "Western" norms.

CONCLUSIONS

The case study was very successful in this Alaskan Tribal community.

Key to the case study success was good communication with the community, facilitated by the community assessor.

The less a community assessor knows the community, the longer it will take to perform the risk assessment and communicate results.

The concept of contamination may be very different to a Tribal community than to "Western" scientists. In Tribal communities

- Any contamination may be too much, regardless of the risk
- Historical and cultural knowledge of the Tribe can be helpful in understanding how they might feel about contaminants in their traditional food
- It is important to acknowledge this alternative perspective as valid while explaining how regulatory no-effect levels are derived and what they mean

True understanding by a community may take months to a year and will take several communications in different forms at different times. The Tribal community may select to feel comfortable with risk assessment results that convey some level of "safe" contamination, or they may not.

While every community and situation will be unique, these insights can be formulated as general guidance in developing a "best practices" template.

LIFELINE™ SOFTWARE ACCESS

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