2001 SHOSHONE COUNTY BRAIN CANCER SURVEY RESULTS

Cluster Analysis Work Group
July, 2001

Rationale for Survey

The Cancer Data Registry of Idaho (CDRI) received a report of increased brain cancer incidence in an area of Shoshone County, Idaho. The area of focus was defined as a census block group which is located in Kellogg and bounded by I-90, South Division Street, McKinley Avenue, and East Smelterville Loop. There were 3 cases of brain cancer diagnosed among residents of the block group from 1990-2000; only 0-1 case was expected based upon rates in Idaho. Although 3 is a small number of cases, it is significantly more than expected. While the overall rate of brain cancer was not elevated in Shoshone County, or ZIP Code 83837, it was elevated for the small area of Kellogg. An additional two cases resided outside the area of focus, but worked in the area. A total of 5 cases were considered eligible for the survey.

It was not known if the cases represent a group of people who are at unusually high risk of brain cancer due to some factor or exposure that they have in common. The survey was in response to concern about elevated brain cancer rates in the area.

Respondents

CDRI received responses regarding three of the five cases eligible for inclusion in the survey. Because there were only three responses, results are presented as a summary to protect confidentiality.

Demographics

One case was male, and two were female. All cases were non-Hispanic White.

Family History of Cancer

None of the cases had a family history (including distant relatives) of brain cancer. Two of the cases had some family history of any type of cancer other than brain or skin cancer. Given the number of first-degree biological relatives for each case, neither the numbers of cancer cases nor the cancer sites among these relatives were unexpected.

Residence History

Two cases resided in the local area for a long period of time (30-50 years). One case resided in the local area for a shorter period of time (about 5 years). While living in the area, all three used city water as the primary source for drinking water, and none lived on a farm or ranch in the area. The two long term residents reported living within five miles of a plant that gave off fumes, gases, particles, radiation, or chemicals of any kind and specifically listed the Bunker Hill Smelter. Reported use of an insecticide or pesticide inside the household was infrequent or unknown for all cases. For no case was use of a professional exterminator reported in a local residence.

Work History

One case had many historical occupational chemical exposures, including to chemicals suspected to be brain cancer carcinogens. One case reported exposure to household cleaning chemicals and fumes. One case reported exposure to lead, arsenic, and cadmium while employed in the area.

Other Exposures

For none of the cases was aerial spraying or crop dusting methods near their home reported.

Medical Radiation Exposure

For none of the cases was any x-ray treatment or radiation therapy prior to this cancer reported.

Hobbies and Activities at Home

One respondent reported participation in hobbies that may have involved exposure to chemicals suspected to be brain cancer carcinogens. Two respondents reported using on an infrequent basis a personal care item or household product that may have contained a suspected carcinogen.

Dietary Practices

Consumption of hot dogs or lunch meats such as ham or other cold cuts was reported as about once per month for two respondents, and unknown for the third respondent. Consumption of bacon or sausage ranged from never to 5 times per month.

Additional Open-Ended Information

Respondents were given the opportunity to include additional information not covered in the questionnaire. Comments included that smelter emissions which killed vegetation in the area, and the EPA clean-up, particularly the high level of fugitive dust resulting from clean-up efforts, may have been factors in brain cancer etiology among area cases.

Conclusions

Other than their area of residence, no common factor or exposure included in the questionnaire links the three cases. One case reported multiple chemical exposures which have been shown in epidemiological studies to have suggestive associations with elevated rates of brain cancer. Two cases reported no extraordinary risks for brain cancer in terms of family, work, or residence histories, or other factors. Respondents believe that smelter emissions and the EPA clean-up, particularly the dust resulting from clean-up efforts, may have been a factor in their brain cancer etiology.