ENVIRONMENTAL EFFECTS ON CHILD HEALTH IN UKRAINE
(TEN YEARS AFTER THE CHERNOBYL ACCIDENT)

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Ukraine, one of the largest countries of Europe, situated on the northern store of the Black Sea has a population of over 52 million, on which 12 million are children. It is experiencing a severe health crisis due to many factors, the two most important being socio-economic and environmental mismanagement.

Environmental factors are one of the more important determinants of health in any nation. This situation cannot be better portrayed then in Ukraine, a region that has been polluted at will for many decades. The health of the population, especially the children has been affected in many ways. In the last several years Ukraine has experienced a negative birth rate.

Other than the cases of acute radiation illness after Chernobyl there has been a significant increase of childhood thyroid cancers in Ukraine. The incidence rate from 1981-85 ranged from 0.4-0.6 cases per million children per year. In 1990 this rate jumped to 2.3; in 1991 to 1.9; 1992 to 4.3 and in 1993 to 3.9. These statistics represent an overall increase of 6-10 fold above the pre-Chernobyl levels. The increase of these childhood malignancies is probably due to the release of excess radionuclides after the accident because 60% of all cases have been registered in the most radioactive contaminated regions.

The nuclear accident in 1986 at Chernobyl precipitated a further deterioration of the state of health in Ukraine. Not until 1992, only after Ukraine achieved its independence was Ukraine's parlament able to pass laws to register, classify the involvement, offer aid and plan for the surveillance of the victims of Chernobyl. Since then the offspring of the victims who had been born by 1994 (over 250,000) are manifesting increased health problems.
The population of large, heavily industrialized regions is being exposed to chronic excessive levels of air pollution, as in the city of Dnepropetrovsk. There the incidence of asthma has increased by 15%, bronchitis and emphysema by 77% and infant mortality by 9.3% in the last 10 years.

Such an environment is prone to unpredictable events. In 1988, in the city of Chernovtsy a mysterious epidemik occurred. Over a 4 month period above 200 children developed an illness manifested by hair loss, upper and lower respiratory and central nervous system involvement. The initial cases started in August with the maximum 66% being in October. Except for two cases, only one sibling per family was involved and above 85% of these cases were children 6 years and younger.

At first paediatricians and toxicologists believed this to be of infectious origin but eventually the metal thallium was identified as the incriminating agent. The unique aspect of the Chernovtsy Chemical Disease is that it was most likely acquired through an airborne route. Unfortunately, the source of contamination has never been discovered, but many affected children have been left with multisystem residual symptoms.

The lack of effective laws, money and scientific expertise is turning an environmental crises into a health crisis. This is no better portrayed than in an increase in paediatric morbidity and mortality statistics.